Research Project for Senior Fellowship in Urban Studies

"Green Around the Gills – Environment, Justice and the Inner City"

Jason Byrne – June, 2000

ACKNOWLEDGEMENTS

First and foremost, I would like to thank Dr Sandra Newman at the Institute for Policy Studies for granting me the research fellowship and Marsha Schachtel for all of her support. Without them, this paper would not have been possible. I would also like to extend my heartfelt thanks and appreciation to Associate Professor Jean Hillier at Curtin University. It was with her encouragement that I applied for the fellowship. I am similarly extremely grateful to Mr Ian Loh at the Water and Rivers Commission who was generous enough to enable me to leave work to pursue my dreams.

My sincere thanks to the citizens of Baltimore and Perth who shared with me their pain, triumphs and insights. It is their stories that are reflected in this paper and I hope that I do justice to them.

I would also like to formally recognize and extend my gratitude to my friends Jack Bouvaird from the France Merrick Foundation and Ellen Warnock who welcomed me to Baltimore, took time out from their hectic life, and enabled me to settle into the city. Their cheerful disposition, informative insights, abundant generosity with time and accommodation made my stay comfortable, entertaining and enjoyable. I will not forget their hospitality.

My thanks too to my fellow fellows: Ayla Goksel - for her insights on vulnerable communities, Pierre Desroschers - for his practical criticisms, Eric Champagne - for many lengthy philosophical discussions and constant encouragement, Dany Nguyen-Luong and Hiroko Shimizu - for their wry humor, and Silke - for being Silke.

DECLARATION

The author accepts personal responsibility for the conclusions presented in this report and the opinions expressed therein, which are those of the author and not the Institute for Policy Studies, Johns Hopkins University.

I certify that the investigations required and the writing of the report have been solely undertaken by me. The opinions expressed within the report are my opinions and not those of Johns Hopkins University.

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EXECUTIVE SUMMARY

Decisions made by land use planners and developers are frequently influenced by the inherent pro-development and anti-environment bias of Western values (Byrne 1998: 10). This is particularly obvious in decisions that relegate hazardous land uses to those parts of cities occupied by low-income earners and people of color (Anderson, 1986, Beckwith, 1996). Such actions have been described as environmental injustice or environmental racism (Alston, 1991, Alston, 1992, Bullard 1993a, Bullard 1993b, Albrecht ,1995). These actions are considered to be racist because people of color and low income earners are often unable to choose where they live and work due to their lack of financial and political power together with institutional processes that maintain their vulnerable position (Mohai, 1990). Consequently, they may have little choice other than to endure neighboring land uses, such as landfill sites, toxic waste dumps or polluting factories.

Research has demonstrated that these decisions are seldom tolerated by people with more wealth and power (Perrolle: 1993, Capek: 1993, Opotow and Clayton: 1994, Hargrove, 1995). Furthermore, some developers, presumably with the best of intentions, in the process of rehabilitating contaminated sites - to clean up the environment or to provide inner city housing, further harm those who are socially or economically vulnerable. The decontamination of hazardous sites often displaces long-term residents who have lived in and around these areas because poor quality housing is displaced and surrounding property values are inflated as the neighborhood becomes healthier and thus more desirable.

This paper examines the policy-role of environmental justice in addressing environmental racism and environmental classism in inner city urban areas. It presents a case study comparison between Baltimore - Maryland and Perth - Western Australia. The research was undertaken as a component of a Senior Research Fellowship through the Institute for Policy Studies at John Hopkins University in Baltimore, North America. The project, which is outlined in greater detail below, demonstrates that social welfare issues are pertinent to urban policy, both in Baltimore and internationally. The research significantly contributes to both the knowledge of, and potential policy solutions to, environmental injustice. It demonstrates that, although difficulty may be encountered, environmental justice objectives can be incorporated into policy and planning decision-making processes.

CHAPTER 1 INTRODUCTION

> *"With the spectre of self-inflicted holocaust much diminished after the ...lapse in the cold war, we now envisage our cities devastated by [other] causes. Choked on bad air, crippled by congestion and contaminated with human and industrial waste, they will be places overtaken by violence, where the divide between the haves and the have-nots dominates the urban form."* (Collins, 1993: 2).
>
> *"...the opportunities provided by a big city are not accessible to everyone and ...the reality for many is unjust and brutal."* (Collins, 1993: 2).

Why is it that some people are forced live in the worst parts of cities, living their lives surrounded by pollution, crime, drugs, violence and discrimination, whereas others live in comparative bliss, enjoying relatively clean air, clean water, nutritious food, proper sanitation, good schools, and healthy lifestyles? Is this just a matter of luck or is there something deeper at play, effectively determining who lives "the good life", or as Healey (1998) puts it "who flourishes", and who suffers? A close look at who lives in the worst parts of cities and who suffers the worst quality of life reveals that patters exist, and these patters are more than mere coincidence. They are effectively spatial expressions of social exclusion (Allen et al, 1998: 9).

From the early 1960s in the United States, and in some instances as early as the mid 1970s in the United Kingdom, "free enterprise" came to dominate planning for the inner-city in Western nations (Hall, 1997: 343-361). Indeed, Cameron and Davoudi (1998: 241) argue that this stage of urban development represents a "...change in emphasis from a concern with the social and economic problems of inner city communities to the physical and economic renewal of the city." Massive urban renewal projects, characterized by public-private partnerships, ambitious redevelopment schemes, an emphasis on commercializing government-owned land to provide funding for the remediation of blighted industrial areas, were seen as the solution to inner city poverty, blight, obsolescence and industrial contamination. Typically, these developments were focused on waterfront redevelopment, a fashion that had its genesis in the United States (Hall, 1997: 348; Cameron and Davoudi, 1998: 241).

It was not until the early 1990s that the trend for revitalization was manifested in Australia. When it occurred there, it initially generated a renewed sense of hope. This is perhaps because it was linked to policies of urban consolidation which held that patterns of urban sprawl could be counteracted through increasing residential density in the inner-city and surrounding suburbs. It was believed that through the process of revitalization and urban consolidation, Australian cities would become more equitable and more sustainable (Anon., 1991: 228). However, even a cursory examination of large scale inner-city redevelopment projects, both in Australia and internationally, reveals that this faith was misplaced and that the end result was far from equitable and arguably that little progress was made towards ecological sustainability.

The following paper discusses my cross-cultural research into environmental justice in urban renewal projects. I researched incidents of injustice within two different, yet in many ways quite similar cities – Baltimore in North America, where the Inner Harbor project was hailed as an international success story and Perth in Western Australia where the East Perth project received similar acclaim. Despite their historical and morphological differences, there is a common link between the two cities - people of color and low-income earners have suffered

because they initially bore a disproportionate burden of pollution and poor quality of life within these cities and they were then displaced when redevelopment occurred. There are other similarities too. The two cities have a colonial heritage, they have similar histories of immigration and segregationist land use policies, and the capricious appetites of corporate capitalism dominate them both. Indeed, these similarities are no mere coincidence.

According to Allen et al (1998: 15), many of the problems experienced in these and other cities can be attributed to "...structural change... in the changing global system...including [changing] labour markets...and ...global competitiveness." To some extent these problems are the result of deindustrialization and the advent of the information economy, and the associated restructuring of the international division of labour. The effects are clearly apparent. Across the world, the gap between rich and poor is increasing. (Gould, 1986: 6; Harvey, 1989: 52; Bartley, 1998: 131; Kurpick and Weck, 1998: 189; Lipietz, 1998: 182) "[F]ewer and fewer people control more and more of the world's resources." (Rose Johnson, 1994b: 233). In urban areas those who do not have access to political and economic power are often relegated the worst parts of the city - areas that are frequently affected by toxic waste and hazardous land uses[1]. This process is known as residential differentiation and its result is often environmental injustice.

Although environmental injustice has generally been considered as a problem experienced only in older industrial cities like Baltimore, this is clearly not the case. Environmental injustice, especially in the contemporary global economic climate, knows no boundaries. Indeed, Macey and Brown (1998: 48) assert that:

> *"The wreckage and contamination caused by the Industrial Growth Society degrade humans and habitats alike: polluting industries are located and toxic wastes are dumped where poor people and people of color live. The farm workers sprayed by pesticides, the miners poisoned by uranium, the forest dwellers whose homes are clearcut...all are largely people of color. Their race and poverty make them easier for a prejudiced society to overlook."*

There is a growing body of literature that cites examples of the discriminatory siting, storage or dumping of hazardous materials in both developed and developing nations, and in rural and urban areas. The common ground is that the offenders are usually white and wealthy whilst the victims are the poor and often people of color (Bullard, 1999).[2]

Sociologist Robert Bullard (1990:83-84) has asserted that "[i]t is impossible to go inside the heads of individuals making land-use decisions [to] determine their intentions." He notes that "Whether intentional or not, the results of land-use decisions are quite revealing of status hierarchies (race and class) favoring whites and the affluent over the poor and people of color." The research I conducted in Baltimore and Perth was, in a sense, an attempt to "go inside the heads" of planners and land use decision-makers. Through asking town planners and municipal

[1] Hazardous land uses are those which are known to cause short term air pollution or longer term contamination of surface water, groundwater or soil (Napton and Day: 1992, Perrolle: 1993, Capek: 1993). They include land uses that involve the production of, use of or storage of radioactive materials, PCB's, toxic solvents, pesticides, and synthetic, petroleum-based organic chemicals such as benzene, as well as heavy metals such as mercury and cadmium together with pollutants such as medical waste and asbestos (Gould, 1986: 10).

[2] There is a considerable volume of literature dedicated to environmental racism in the developing world. Incidents like that of the accident in Bhopal, India have highlighted the fact that more lenient health standards, environmental laws and industrial laws are exploited by corporations and governments of the developed world. For examples refer to Gould, 1986;

officials how they made decision, and how they felt about issues of pollution, and then comparing their answers with archival and empirical evidence, I was able to gain some understanding of the context in which decision-making occurred, and the issues that shaped and motivated those decisions. In particular, my research sought to examine whether or not the remediation and gentrification of contaminated inner city areas, to increase their attractiveness to affluent commercial and residential land uses, displaced those residents who were most likely to have been subjected to environmental discrimination, thus perpetuating their disadvantage.

The social consequences of the displacement of established inner city communities include increased journey-to-work distances, reduced access to facilities and services - especially public transport, stigmatization, "..reduced access to family and friends, lack of childcare, costly journeys to shops...(Healey, 1998: 60) and a loss of a sense of community. The redevelopment of contaminated sites associated with gentrification in inner city areas is an example of insidious environmental discrimination. This paper attempts to explore practical options for land use planners to incorporate principles of social and environmental justice into policy decision-making to avoid the mistakes that have occurred in East Perth and Baltimore. These options are intended to ensure that when planning for the remediation of contaminated inner-city sites, the subsequent development is as just and equitable as possible.

Research philosophy (context)

Assertions

In this report I align myself with Bullard, Colten, Mohai and others who assert that planners and developers, whether consciously or not, practice environmental discrimination in everyday decisions about the location of hazardous land uses and the redevelopment of contaminated sites. I assert that planners and developers are biased by their values. I argue that they follow a utilitarian ethic that leads to the unfair and unjust treatment of people of color – African Americans, Latin Americans and Australian Aboriginals together with low income-earners. I contend that the quasi-scientific approach to decision-making results in decisions that are neither objective nor just. However, I also assert that another explanation may be found in the way that capital shapes urbanization (Harvey, 1989). Indeed, the values of planners can be seen to be a product of the hegemony of capitalism. The bourgois, in seeking to protect their place in the city embrace values that perpetuate their lifestyle.

Language

Before proceeding further, it is important to address the issue of language used within this report. The terms "African-American" and "People of Color" are used in place of "black" as this phrase is considered to be derogatory towards Australian Aboriginals and some African Americans. In addition, the term "vulnerable communities" is used instead of "minority", "outgroup", "powerless", "disadvantaged" or "victims" as I believe that the latter terms stigmatize the people to whom they refer, signaling that they are in some way inferior, are unable to manage their own affairs, or that they are helpless (Bolin, 1998: 10). Such a conclusion of course, would be grossly prejudiced.

In so far as income is concerned, the term "low-income earners" is used in place of "blue collar workers". To the best of my knowledge, there has been no objection raised to the use of

the term white to refer to people of Caucasian descent so it is retained throughout this document. I feel that these distinctions are important as they are not intended to be politically correct but rather to be respectful to the people concerned.

Policy issue

There is strong evidence to suggest that in North America, people of color and low income earners are regularly subjected to environmental injustice (Anderson, 1986; Bullard and Wright, 1990; Boyle, 1993; Been, 1994; Blowers and Pieter, 1994, Braile, 1994, Bullard, 1994, Westra and Wenz, 1995; Bullard, 1999). The same pattern has been noted in Australia (Beckwith 1996, Fincher; 1998). However, much of this evidence has been the subject of growing criticism, either for its research methods or for alleged bias (Boerner and Lambert, 1995). Clearly, there is an urgent need for the development of policy approaches, based on defendable empirical research, to address issues of environmental justice in the design and redevelopment of urban areas, particularly those characterized by undesirable land uses. Dobson (1998: 5) advocated such a position, in contemplating the relationship between environmental sustainability and social justice, he called for " a raft of studies" to explore the issues. Problems that have arisen by not taking these issues into account include the exposure of people of color and low-income earners to health hazards such as toxic chemicals, radiation, lead, and air and water pollution.

Policy significance of the topic

Merchant (1992: 164), citing the landmark 1987 Uniting Church of Christ report on environmental injustice, noted that "communities with the greatest number of commercial hazardous waste facilities had the highest composition of racial and ethnic residents." Clearly this subject has significant policy implications, particularly with regard to land use planning processes and values. Merchant further states that "[i]nner city air and soil are contaminated with lead from chipping house paint and auto emissions. A 1988 study conducted by the Federal Agency for Toxic Substances and Disease Registry showed that black children were four times as likely to encounter lead poisoning as white children. ...Native American tribes have been offered large sums of money for allowing their lands to be used as toxic waste dumps."

In Western Australia, despite the fact that environmental justice is not recognized, the proposed international nuclear waste dump is a topical example of environmental injustice and indeed of environmental racism. The traditional owners – Aboriginals, having been dispossessed of their lands post-second world war for the testing of nuclear weapons, now face the prospect of having their land contaminated by nuclear waste. Higgins (1993) provides an overview of the significance of such environmental justice issues to policy processes.

Cole (1992) and Godsil (1992) have suggested several policy approaches to address environmental injustice. Although regulatory approaches and the role of the free market have been considered, the role of underlying values has yet to be examined in detail. It is believed that this project will substantially contribute to what is a relatively new field, particularly in the application of lessons learned from North America to planning in Western Australia.

There are several policy issues that will be addressed by this project. These are social justice, environmental justice, environmental racism and the role of values in decision-making. Major research questions to be addressed by the project include what is "environmental racism"?

What is "environmental justice"? Do planners have a role to play in intervening in the free market to ensure that environmental injustice is prevented? If so, how might this be achieved? What do the victims of environmental discrimination think and feel about land use planning decisions that have lead to their plight? How do they believe that these issues might be addressed?

Other research questions include: do planners' values lead them to make decisions that discriminate against people of color and low income earners? If so, what needs to be done to reverse this trend? What form would it take? How could it be put into practice? Who would administer it? Can non-monetary measures of environmental discrimination be used to understand the real costs of decision-making compared with traditional economic considerations? What changes will be necessary to North American and Australian economic, planning, social and environmental institutional frameworks to shift decision-making away from policy decisions that result in environmental injustice?

Relevance of the topic

The topic is extremely relevant both to Baltimore and cross nationally. As mentioned earlier, environmental justice is not recognized in Australia and is also poorly recognized in other countries such as Britain (Dobson, 1998: 27). This project draws on practical experience and literature documenting incidents of environmental injustice both in Baltimore and in Perth, Western Australia. Examples include the redevelopment of the East Perth Gas Works, formerly home to a mainly Aboriginal and low income population, and now a wealthy, exclusive inner-city suburb, and the redevelopment of Kwinana, a low income and ethnic housing estate built on the outskirts of Perth in the 1950s to house workers for Perth's heavy industries. This project has the potential to put environmental racism and environmental classism on the agenda of policy makers in Western Australia and represents an innovative and long awaited contribution to social planning in the State. It also has the potential to bring about change in the redevelopment of Baltimore's older inner city residential areas and contaminated former industrial sites.

Baltimore

The most immediately noticeable characteristics of inner city Baltimore are the virtually incessant sound of the sirens of emergency vehicles, the yellow haze that blankets the city on sunny days and the boarded up row houses that are scattered throughout inner city neighborhoods. The sirens are perhaps indicative of the social unrest that characterizes many parts of the post-industrial city as it struggles to come to terms with its place in the global economy, and as citizens in its vulnerable communities struggle to overcome prevalent environmental injustice.[3] The pollution is a legacy of the city's industrial heritage and a product of thousands of commuters as they stream to and from the suburbs in a ritualized diurnal exodus. The boarded up houses are symbolic of a system that has fallen victim to judicial process and of recalcitrant landlords who would rather lose rent than be sued for neglecting their tenants.

Other sirens are at work in the city too - these are more reminiscent of the variety depicted in Greek mythology. They plague the dreams of neo-Liberal, neo-orthodox city planners, mayors and big developers alike. They represent the klaxon call of big money. The

[3] Indeed, social unrest has characterized the city throughout its history. Fee et al (1991: ix) note that Baltimore in 1877 was the locus of the "largest single industrial uprising in U.S. history."

gentrification or "renaissance" of blighted harbor-side suburbs in Baltimore has been a boon for real estate developers. They have profited from concessions readily proffered by anxious city officials, desperate to erase economic, social and environmental problems that have beset the city since the demise of its traditional industrial base in the 1970s (Levine, 1987; Anft and Rath, 1999). However, the often-touted success of the inner harbor development, with its blatant "Disneyfication" (Harvey, 1989: 260, 1991: 233-236), is for the most part, a song sung in a minor key for many vulnerable Baltimore communities. It has heralded the onslaught of further discord that has been inflicted upon inner city residents in the name of progress, redevelopment and improvement. These developments have been doubly regressive. They have diverted funds away from important social programs whilst simultaneously raising land values leading to the displacement of people of color and low-income earners.[4]

My research in Baltimore draws upon the theoretical work of Harvey (1996) as a basis for further investigation into the place of social and environmental justice in land use policy decisions. Baltimore, as a declining, older industrial city, is currently suffering from changes to international economic markets and the increasing mobility of global capital. Baltimore's population has declined significantly from 1990 to 1995.[5] Furthermore, the unemployment rate of Baltimore is currently at 10.7%[6] which is considerably greater than the national average. Land use planning solutions to reversing declining populations, unemployment and crime in older industrial cities like Baltimore have traditionally focussed on economic approaches, particularly the revitalization of blighted inner city areas. Baltimore's port district, with its US$650 million marina and condo tower development is one such example[7]. The development of the world trade center and more recently the transformation of the old industrial site at Canton into condo towers, townhouses, offices and restaurants are other good examples. However, these measures often harm the very people who have been worst affected by economic structural change in cities – people of color and low income earners. These are vulnerable communities. They have been forced to live in the most blighted and often most contaminated areas the city, something that is frequently detrimental to their health. Then they suffer social and economic hardship when these areas are redeveloped. They are displaced and their communities are fragmented.

Perth

The city of Perth, one of the most isolated cities in the world, basks in the radiance of its mineral endowments, with an enviable renewed inner city life and an atmosphere that is characterized by bird calls, cappuccinos, green lawns and sleek suits. However, as Collins (1993) notes Australian cities share a similar experience to other cities internationally. According to Collins (1993: 2), "population pressures are turning the rivers into sewers as [Australian] cities disappear into a toxic cloud of yellow air. Inner city neighborhoods are replaced by high security apartments while on the fringe, productive farmland gives way to vast dormitory suburbs, disconnected from the culture of the city, in a cheap replica of the good life." As is becoming commonplace in other cities of the world (Bartley, 1998), the poor in Australian cities are out of sight. Social exclusion is spatially expressed through the shifting of the poor to the periphery - out into the suburbs. It is the converse of the North American experience. Much of this is no

[4] Ironically, other cities have looked towards Baltimore as an example to be copied (Harvey, 1991: 237).
[5] John Hopkins International Fellows in Urban Studies background information.
[6] Internet information from the Department of Economic and Employment Development, Office of Labor Market Analysis.
[7] Information derived from by the Baltimore Chamber of Commerce internet site.

accident. Urban and Regional planning plays a strong role in "...contribut[ing] to social exclusion by isolating and dividing groups...[or]...simply ignor[ing] their existence and needs. (Allen et al, 1998: 10)

Although there is strong evidence to suggest that environmental injustice exists in Australia (Fincher, 1998), with Aboriginal communities being the most heavily impacted, it is still largely unrecognized by policy makers and land use planners. There are several parallels between Perth and Baltimore. Perth has suffered from similar rates of unemployment in the past, and the socially vulnerable are subject to environmental racism and environmental elitism.[8] This is particularly the case for Aboriginal residents. In Western Australia, redevelopment of blighted industrial areas at East Perth in the inner city and Kwinana, the major heavy industrial center of the Perth Metropolitan region, have displaced low income and ethnic minority residents. Although some provision has been made for those residents to purchase redeveloped housing, the price is often too high, the location alienating and the amount of affordable housing is negligable. Moreover, it is virtually impossible for Aboriginals to access housing in these areas as prejudiced residents frequently lobby the Ministry for Housing, to ensure that Aboriginal tenants are not placed there.

Whilst there are obvious environmental gains to the clean up and redevelopment of contaminated sites, those who benefit are upper-middle class, well educated, young professionals rather than vulnerable communities - people of color and low income earners. It is clear that the environmental benefits of "cleaning up" such sites must be weighed against the social costs of redevelopment.

Structure of the paper

The paper commences with an overview of environmental justice issues, theory and praxis before addressing issues that are specific to Baltimore and Perth. Chapter 2 provides an overview of the theoretical context of environmental justice. Considerations are given to the disproportionate impacts of pollution, theoretical explanations for environmental discrimination, and the socio-spatial manifestations of injustice. A typology of injustice is explored using case studies from contemporary literature to illustrate assertions. The chapter concludes by examining theoretical explanations for environmental injustice that focus on decision-making processes as the cause for injustice as opposed to economic processes.

The research design for the empirical research is discussed in Chapter 3. The relative merits of research methodologies are explored and the detailed aspects of qualitative and quantitative methodologies used throughout the research are discussed. The chapter concludes with a discussion of strengths and weaknesses of the methodologies and a discussion of how possible sources of bias were controlled. The fourth chapter of the paper is dedicated to analysis of the empirical and demographic data.

A comparative analysis of environmental injustice in the inner city areas of Baltimore and Perth is provided in Chapter 5. This chapter considers the advantages and disadvantages of urban revitalization, and consideration is given to the respective approval processes operating in

[8] For a full discussion of environmental elitism and its various guises, refer to Bullard (1990: 9), Westra and Wenz (1995: xvi)

Australia and the United States at the Federal, State and Local levels. The typology constructed in chapter 2 is revisited, this time as an analytical construct - the two case studies are discussed using the typology to illustrate the processes of exclusion that operate within urban revitalization projects. Socio-spatial demographies of pollution in the two cities are compared and the underlying factors seen to be responsible for these patters are discussed. This chapter concludes with a discussion of the role of planning in influencing the location and extent of ex-industrial sites in the two cities.

The final chapter in the paper, Chapter 6, discusses measures to counteract environmental injustice. These measures include institutional reform in the areas of legislation and procedural justice, community empowerment, judicial reform, regulation of pollution and ethical considerations in planning decision-making. The chapter concludes with a summary of findings and recommendations regarding the need to bridge the schism between environmental justice and justice to nature.

CHAPTER 2 THEORETICAL CONTEXT

"Although the effects of pollution have no geographic boundaries, blacks (sic) and low income groups are often "trapped" in polluted environments because of low incomes, housing discrimination and residential segregation, limited residential choices, discriminatory zoning regulations, and ineffective land use policies." (Bullard, 1992: 95)

Chapter outline

This chapter commences with an examination of what is meant by the terms environmental racism, environmental justice, and environmental equity. It then examines contemporary theoretical explanations for environmental discrimination. There are three distinct theoretical perspectives that are given consideration. The first perspective could be termed economic theories of contamination. It conceptualizes the association of people of color and low-income earners with hazardous sites and polluting land uses as the product of benign, or at least neutral, market forces. The second perspective could be termed value theory. It attributes environmental discrimination to decision-making based on distinct values that underlie institutional decision-making processes, which lead to prejudiced outcomes. This second paradigm includes conceptions of social justice and the social construction of justice. The third explanation - Marxism, integrates elements from the other two. Marxist explanations posit that the function of Capital includes the perpetuation of values that serve to reinforce the position of the capitalist class.

The chapter then examines potential solutions to environmental racism and environmental elitism.

Wherever possible, discussion throughout the chapter utilizes actual case studies drawn from the relevant literature on the topic to illustrate theoretical concepts and arguments.

The disproportionate impact of pollution

A considerable volume of research to date has asserted that there are strong connections between pollution, race and poverty (Bullard: 1990, Laituri and Kirby: 1994, Pollock and Vittas: 1995, Westra and Wenz, 1995). Two broad divisions are evident within the literature on environmental inequity. The first is comprised of those authors who regard the disproportionate distribution of pollutants as a function of race – hence the term environmental racism. It includes commentators such as Bullard (1990), Westra and Wenz (1995). The second division is composed of those authors who contend that environmental inequity is a product of both racism and classism, with income being the best predictor of disproportionate impacts. They prefer the label environmental justice. This differentiation is now considered in greater detail.

Environmental racism

There are many definitions of environmental racism. The term was originally coined by Rev. Benjamin Chavis (Lee, 1992: 10; Bullard, 1995a; and Westra and Wenz, 1995: xvi). It refers to the disproportionate siting of hazardous facilities within communities comprised

principally of people of color. Bullard (1990: xv) outlines the contentions of commentators who regard race as a predictor of spatial discrimination:

> *"Limited housing and residential options, combined with discriminatory facility practices, have contributed to the imposition of all types of toxins on African American communities through the siting of garbage dumps, hazardous-waste landfills, incinerators, smelter operations, paper mills, chemical plants and a host of other polluting industries. These industries have generally followed the path of least resistance, which has been to locate in economically poor and politically powerless African American communities."*

Bullard (1990: xv) defines environmental racism as:

> *"...any practice, policy or directive that differentially affects or disadvantages (whether intended or unintended) individuals, communities or groups based on race or color. Environmental racism combines with public policies and industry practices to provide* benefits *for whites while shifting industry* costs *to people of color."* (His emphasis).

In a similar vein, Phillips (1995: 95), citing the Environmental Equity Handbook, defines environmental racism as:

> *"...any environmental policy, practice or directive that, intentionally or unintentionally, differentially impacts or disadvantages individuals, groups, or communities based on race, color or ethnicity. It also refers to exclusionary and restrictive practices that limit, the participation by people of color on decision-making boards, commission, and the staff of government agencies with responsibilities in the area of environmental policies, programs ,and permits."*

However, Westra and Wenz (1995: xxi) are a little more cautious. Although they remain true to the stricture that race is the sole determinant, they cast their definition in terms of minority communities, allowing for a broader interpretation:

> *"...the practice of viewing minority communities as means to the majority's ends, and of burdening the disempowered with what no one else is prepared to accept, or of furthering the economic success of some at their expense."*

I shall return to this point shortly when I discuss environmental justice. First, however, it is true to state that all definitions of environmental racism share several key elements. They are identified in **Table 1** below:

Characteristic	Author(s)
The more affluent a community the better its quality of life.	Bullard, 1990; Gould, 1986;
There is an inequitable distribution of natural resources and / or toxic hazards in north American cities such that affluent, white communities benefit from access to healthy environments more so than other residents.	Hurley, 1994; Laituri and Kirby, 1994: 121; McCurdy, 1995; Phillips, 1995;
People of color bear a disproportionate burden of environmental hazards.	Bullard, 1990; McCurdy, 1995; Phillips, 1995; Westra and Wenz, 1995;
Environmental racism occurs in both urban and rural settings but is usually manifested differently in these areas.	Bullard, 1995;
There is a biased enforcement of environmental laws - regulatory agencies are	Bullard, 1990; Rose Johnson and

Characteristic	Author(s)
less likely to act on violations of regulations by companies if they occur in vulnerable communities and if companies are cited, they are likely to receive lower penalties if they if they are located within communities composed of a high percentage of people of color.	Button, 1994: 211; Boerner and Lambert, 1995:61; Pollock and Vittas, 1995: 295; McCurdy, 1995; Phillips, 1995; Westra and Wenz, 1995.
Site remediation disproportionately favors white people over people of color as toxic sites within white communities are remediated earlier and to a higher standard that sites in neighborhoods characterized by a high proportion of people of color.	Phillips, 1994; Boerner and Lambert: 1995, 61; McCurdy, 1995; Phillips, 1995; Westra and Wenz, 1995.
"Racial barriers to education, employment and housing reduce mobility options available to the black [sic] underclass and the black middleclass."	Bullard, 1990: 6;

TABLE 1 - CHARACTERISTICS OF ENVIRONMENTAL RACISM

Factors that may lead to environmental injustice include exclusionary zoning (Bullard 1995: 82), institutional racism, "apartheid-style housing development policies" (Bullard 1995: 80), the racist practices of the real estate industry and financial institutions, the effects of federal farm policies, negligence on the part of state and municipal governments in the investigation of pollution incidents, and the uneven enforcement of environmental laws (Bullard, 1990; Hurley, 1995). For commentators like Bullard (1990: 5), race is seen as the critical determinant of land use patterns. They regard policies and practices that discriminate against people of color and little more than "urban apartheid".

Bullard states that : "[r]ace continues to be a potent variable in explaining the layout of urban areas, including housing patterns, street and highway configurations, commercial development, and industrial facility siting." However, other commentators hold that race alone does not fully account for inequity within urban areas. For example, Been (1995) cited in Wenz (1995: 58), states that "[a]s long as the market allows the existing distribution of wealth to allocate goods and service, it would be surprising indeed if, over the long run LULUs [locally unwanted land uses] did not impose a disproportionate burden on the poor." Commentators like Been, clearly believe that income is the critical determinant of environmental quality within urban areas.

Environmental justice

Environmental justice or "social justice environmentalism" (Rose Johnson 1994a: 229) is based on the premise that all people, regardless of ethnicity, gender or socio-economic status, have the right to live in a clean, healthy and safe environment (Pulido, 1991) and to enjoy equal access to a safe and healthy workplace (Laituri and Kirby, 1994). Andrew Dobson (1998: 20) - a theorist who has explored conceptions of environmental sustainability and social justice, highlights an important distinction, noting that: "environmental justice does not mean "...justice to the environment, but refers rather to a just distribution of environmental goods and bads among human populations." He argues (1998: 24) that environmental justice is ...much more about human justice than about the natural environment...". Justice to the environment on the other hand is concerned about the environment "for its own sake" (Dobson, 1998: 18). To paraphrase Bullard (1990: 119), advocates of environmental justice seek to prevent pollution before it threatens vulnerable communities, to eliminate harmful practices in land use planning,

health care, sanitation and industrial planning and to uncover the underlying assumptions and processes that lead to unequal protection.

Dobson (1998: 7) asserts that conceptually, environmental justice is predicated on several fundamental elements. The first is the fact that not everyone suffers equally from environmental degradation. Second, membership of the " community of justice" is not extended to all people, let alone to non-human species. The critical question Dobson asks in this regard is "...among whom or what is distribution to take place?" Distribution, according to Dobson (1998: 20) refers to the environmental "...goods and bads[9] that society must divide amongst its members."

As with environmental racism, environmental justice is characterized by several core themes. These are listed in **Table 2** below.

Characteristic	Author(s)
There is usually criticism of the "main stream" environmental movement as being elitist.	Bullard, 1990: 1; Bryant and Mohai (1992: 6); Taylor, 1992: 39;
Acts of environmental injustice occur throughout the word both in the developed nations and in developing countries.	Westra and Wenz, 1995;
The frequent location of large corporations in developing countries to take advantage of cheap labor and less stringent environmental regulations and enforcement.[10]	
In developed nations it is usually vulnerable communities in either the inner city or in rural areas that are prone to discrimination.	
Developing nations often suffer from Western imperialism with developed nations exporting toxic waste to developing countries for treatment or storage.	
"...human rights are ignored,... citizens are disempowered...and good...laws and regulations...are disregarded.	Westra (1995: 130).

TABLE 2 - CHARACTERISTICS OF ENVIRONMENTAL JUSTICE

[9] There is a risk with this language that environmental justice will suffer from modernist values, in particular, the commodification of nature.

[10] A good example is the exploitation of the Yonggom People on the Ok Tedi river in Papua New Guinea by Australian mining giant BHP. (Rose Johnson and Jorgensen, 1994: 87). Contamination of the Ok Tedi river from a massive gold mining operation has made the water undrinkable, altered the hydrology, destroyed habitat and killed aquatic and riparian organisms. Contaminants include copper, iron, manganese, zinc, lead, cadmium, arsenic and cyanide. The Yyonggom have subsequently been displaced from their traditional homeland.

Principles of environmental justice

Bullard (1990: 119-121, 1995b: 9-20) has articulated five principles of environmental justice. These are: (1) the right to protection; (2) prevention of harm; (3) shift the burden of proof; (4) obviate the proof of intent and (5) redress iniquities. A sixth principle - commensurable benefit, is added by Wenz (1995). These principles are briefly discussed below.

The right to protection

This principle requires that all individuals have the same right under law to protection from harm as a result of environmental degradation. It necessitates institutional reform to remove any intended or unintended differential impact that arises as a result of public policy and / or legislative instruments. This topic is addressed in greater detail in chapter 6.

Prevention of harm

Bullard (1995b: 12) asserts that this is the only effective strategy for dealing with noxious land uses and pollution. Rather than relying on screening processes, pollution abatement technology or site remediation technology, this principle requires that the creation of pollution be avoided in the first place. It is certainly a safer approach as it avoids the many possible failures that can arise from the use of best practice or beast available technology. For example, a site remediated to the limits of current technology may still be sufficiently contaminated to cause harm and hence addition cost to future generations.

Shifting the burden of proof

In the United States, the current system for redressing pollution places the burden of proof on residents who are affected by the pollution not on the polluter. This system is highly iniquitous as it requires the expenditure of considerable funds by community groups to gather evidence and hire lawyers to represent them. Bullard proposes shifting the burden of proof to polluters as not only are they more able to pay the costs of defending their actions, but they are often culpable.

Obviating the proof of intent

Another difficulty experienced by grassroots environmental justice groups is proving intent to harm on the part of a polluter in a court of law. There is considerable evidence to suggest that magistrates and judges are unwilling to hold polluters accountable for deliberate or intentional discrimination as this is extremely difficult to prove. To overcome this problem, Bullard (1995b: 18) argues that grassroots groups should be able to be prove intent. through statistical evidence. This position has however been strongly criticized by Boerner and Lambert, (1995) as they assert that statistical methodologies for correlating pollution with discrimination are flawed.

Redressing iniquities

Bullard (1995b:20) proposes that it is not acceptable to just prevent new cases of environmental injustice from occurring, but that previous examples of disproportionate impact should be addressed through targeted actions and provision of appropriate resources for

remediation, relocation and / or compensation. Bullard argues that some communities have been targeted as "sacrifice zones" because decision-makers believe that it is better to locate noxious land uses in neighborhoods that are already polluted rather than pollute additional neighborhoods. The result of this is that some communities bear an overwhelmingly disproportionate burden of pollution. Bullard cites Richmond in San Francisco and Baton Rouge in Louisiana as good examples. This assertion is supported by (Wenz, 1995: 119).

Redressing iniquity would require that these communities be relocated or the polluting industries shut down. In addition, Bullard argues that polluting factories with a proven record of causing harm should be closed down permanently. Other methods of redressing iniquities include the provision of free or subsidized health care for those affected by pollution, the construction of health care clinics in polluted neighborhoods, and the effective prosecution of polluters.

Commensurate burdens and benefit

Wenz (1995: 59) augments Bullard's five principles with a sixth – that of commensurate burdens and benefit. Wenz asserts that "those who derive benefits should sustain commensurable burdens." According to this principle, those who benefit from the production of toxic waste should carry a burden of that waste commensurable to the benefit they derive. Thus, those who benefit the least – the poor, should carry the lowest burden. In addition, "...people's proximity to toxic wastes [should] be related positively to their income and wealth." Wenz (1995: 62)

Conceptions of equity

According to Wigley and Shrader-Frechette (1995: 142), equity is a "traditional American value", although little more than a cursory glance at contemporary American cities seriously challenges this assertion – so entrenched are social and spacial inequities. Bullard (1995b) identifies three different types of equity – procedural, geographic and social equity. Procedural equity, according to Bullard (1995b: 4) refers to fairness in government rules, regulations, enforcement procedures and decision-making criteria. It requires that these apparatus are applied on a non-discriminatory basis. Distributional or geographic equity refers to the physical location of toxic land uses and their siting. Social equity is based on the role of characteristics such as race, class, gender and religion in decision-making.

The opposite of equity is what Johnson (1994: 11) refers to as selective victimization. According to Johnson, selective victimization "...is a product of cultural notions (e.g., racism, sexism and ethnocentricism) as well as political economic relationships and histories (of colonialism, imperialism, ethnocide and genocide)." To overcome selective victimization, including environmental racism, necessitates taking an approach that removes notions of "difference" or "otherness" and replaces them with a conception of equality. This is precisely what the environmental justice movement has attempted to do in the context of toxic waste and pollution.

Environmental equity and quality of life

Linked to justice are notions of equity. Pollock and Vittas (1995: 295) define environmental equity as "...the extent to which burdens of environmental pollution are evenly distributed across society." They (1995: 307) assert that "*inequity may be directly measured by*

the degree of difference in pollution exposure between social groups" (their italics). Pollock and Vittas contend that in the United States "African Americans and Hispanics reside closer to potentially hazardous sources and therefore bear an inequitable pollution burden." Many commentators observe that the "issue of environmental equity has been ignored in many American cities" (Laituri and Kirby, 1994: 125).

Laituri and Kirby (1994: 125) contend that quality of life within North American cities is largely dependent upon access to clean air, water and soil and that such access is not ubiquitous. Indeed they argue that quality if life is "rather predictably linked with ethnic and class divisions within the city". As has been discussed in this chapter, there is compelling evidence to substantiate the claim that neighborhoods characterized by low income earners and people of color will have considerably worse environmental amenity than their affluent counterparts. Any discussion of the detrimental impacts of the uneven character of environmental quality would be incomplete without a discussion of environmental quality. Quality of life indicators have been developed by planners and geographers to describe quality of life in neighborhoods. The use of these indicators has the potential to not only identify neighborhoods with poor environmental quality, but to generate appropriate responses to progress towards the amelioration of environmental iniquity. It must, of course, be recognized that the use of these indicators in the absence of action to treat the cause of inequality would be meaningless.

Gould (1986: 8) lists quality of life indicators for American cities as access to clean air, clean water, and the absence of hazardous or toxic wastes. However, it would be appropriate to expand this list to include freedom from violent crime, absence of noise pollution, access to public open space, access to natural light, access to affordable public transport, access to affordable, good quality food, and equal opportunity. If these standards were baseline requirements many cities would fail the quality of life test. However, it is also important that quality of life indicators are culturally (context) specific and free of middle class or western value judgements.

The concept of vulnerability

An important element in any understanding of environmental justice is the identification of communities that are prone to being targeted for discriminatory land use practices. These communities are known as vulnerable communities (Bolin, 19994) or vulnerable neighbourhoods (Allen, 1998). Bolin (1994: 2), an anthropologist investigating earthquakes and their effects on vulnerable communities in the United States, notes that "...[d]isasters, as social processes, are shaped and structured by the sociocultural formations and political and economic practices that exist prior to the onset of a hazard event." According to Bolin (1998: ix) "...vulnerability is understood as a consequence of various kinds of social inequalities. ...[based in]... the...nature of societies and their unequal allocation of risks and resources. According to Bolin (1994: 2), "[i]t is from the social, geographical and cultural history of people and places that we gain glimpses into who is vulnerable, who is at risk, and what may happen to them as a hazard agent triggers a disaster."

Bolin asserts that that "[t]he root cause of people's vulnerability to...hazards must be sought in [the interplay of] social and political-economic processes that structure [people's] daily

lives."[11] (Bolin, 1998: 3). As a consequence, "[v]ulnerabilities are unevenly distributed among individuals, households, communities, nations, and entire regions of the worlds." (Bolin, 1998: 9). Vulnerabilities are socially constructed (Bolin, 1998: 35-37). A similar observation is made by Allen (1998: 28). She asserts that an important consideration in regard to poverty and social exclusion is "...the social multidimensionality of poverty...so that age, gender, race, migration, household structure, educational qualification, etc. form a set of lines along which peripheralisation and potential exclusion...can run." Vulnerability is associated with notions of choice (Bolin, 1998). The less choice that individuals or a community have, the more vulnerable they are to being exploited. A vulnerable community, in the context of environmental justice then, is one comprised predominantly of people who are at risk of environmental discrimination, and who have little if any choice in limiting that risk - namely people of color and /or low income earners[12].

Theoretical explanations for environmental discrimination

There are three theoretical explanations for environmental injustice. The first is a market-based explanation which argues that the prevalence of toxic waste sites and polluting land uses within minority and low income neighborhoods is a product of market forces. Some who subscribe to this explanation (for example Boerner and Lambert, 1995) even suggest that accounts of environmental racism are greatly exaggerated, partly as a product of research to date which they claim has been flawed by biased methodologies. These critics argue that preventing the location of such facilities in minority neighborhoods actually harms vulnerable communities by depriving them of jobs and much needed revenue in the form of municipal taxes.

The second explanation of environmental injustice postulates that it is the product of values deeply entrenched within Western society, and more particularly within decision-making agencies and corporations. These values include the domination of nature, racism, sexism, heteronormativity and the subjugation of difference. Value explanations assert that environmental injustice occurs because individuals making decisions within corporations and government agencies have been socialized against recognizing the harmful effects of these decisions. Both the economic and values explanations only partially account for incidents of environmental injustice. The real causes are often more complex, interwoven and insidious (Bryant and Mohai, 1992: 6).

Economic explanations

According to Boerner and Lambert (1995: 68), economists "...refer to pollution as an "external cost" or a "negative externality"." These are costs that are "involuntarily borne" by individuals outside the production process.

The economic theory that is most commonly used to explain environmental injustice is that of the land bid-rent mechanism. This theory postulates that land uses bid against each other

[11] Research into these processes, and the interplay between history, society, space, and economy could be termed "..the [social] ecology of risk." (Bolin, 1998: 3).

[12] Bullard (1990: 1) refers to such communities as "at-risk populations". According to Bullard (1990: 2, 6), such communities are exposed not only to threats such as industrial pollution, but their vulnerability also creates stress which affects health and increases the impact of discrimination. Stress can have physical consequences including heart disease, hypertension and anxiety (Bullard, 1990: 6).

for the best locations within a city. Those land uses that return a higher profit are able to out-compete other land uses for a favored site. The land uses which return the lowest profit are relegated to the least desirable parts of the city, whether this is away from transport routes, in topographically uninteresting areas or next to noxious or hazardous sites. This, it is argued, accounts for the disproportionate distribution of undesirable land uses in vulnerable neighborhoods. It is a matter of "simple economics". Diagram 1 below is a representation of the mechanism.

FIGURE 1 - THE LAND BID-RENT MECHANISM

Criticisms of the economic model

A bias towards economic values

As was discussed above, many economists simplify and rationalize human behavior arguing that environmental racism is simply the unfortunate product of the market. However, they fail to recognize that institutions such as corporations, financial institutions and governments often foster a world view in which "environmental justice is regarded as "a threat to job security". Laituri and Kirby (1994: 123) assert that "the issue of environmental health has become obfuscated and made into an entirely different issue, one of growth, employment and development." Laituri and Kirby (1994: 123). They contend that the result of the operation of these hidden values is that:

> *"...the issues of everyday life – congestion, pollution, stress – become filtered through the discourse of economic development – more jobs, better city development...Thus, in situations where hazardous chemicals or radioactive materials exist, it is usual to find that residents' fears are downplayed by large employers...even though individuals sense that there is a heightened risk in their everyday existence." Laituri and Kirby (1994: 124).*

Indeed, Bullard (1990: 8) asserts that vulnerable communities pay the highest price for the effects of growth.

Flaws in evaluation methodologies

Value explanations

Robert Bullard (1990), widely acknowledged as a champion of the social and environmental justice movement accepts that values may play a role in environmental injustice. Pursuing an explanation that regards values as the source of social problems, such as environmental racism, offers an alternative, and I contend less naive, view than that promulgated

by neo-orthodox economists. Lawson (1995: 42) supports Bullard's contention, stating that the "overall conception of cities by most Americans is negative." Those who live in the inner city are thus often stigmatized by the negative view of cities. The inner city is regarded as unsafe. Lawson (1995: 47) asserts that "...the face of poverty in the United States is a poor, inner city, unmarried black woman with children."

The role of values

In contrast to economic explanations of environmental racism, some commentators view environmental injustice as a product of values. Laituri and Kirby (1994: 122) contend that the city is regarded by many as an unnatural place and as "...a locus of alienation and artificial values" contrasted against "bucolic" rural areas and wilderness. The residents of cities, according to Laituri and Kirby (1994: 122), view "traffic congestion, noise and air pollution, crime and the concomitant cost of public services as normal...". The city "...becomes a literal assertion of human progress and [the] domination of nature..." and the act of creating cities is seen as "...a triumph of collective national values." (Laituri and Kirby, 1994: 122). However, they assert that "...connections have not generally been made between environmental and ...social ills, such as the lack of affordable housing or employment." (Laituri and Kirby, 1994: 123). No doubt Rose Johnson (1994a: 220) would agree, adding that "[m]uch of what can be categorized as human environmental rights abuse occurs in the name of development...".

Laituri and Kirby (1994: 124) further argue that the residents of inner cities are becoming fearful of their neighborhoods and that the city is perceived as a "risky place to live". Commentators such as Bullard and Laituri and Kirby contend that this fear is due, among other things "...crowding, crime, poverty, drugs, unemployment, congestion, infrastructure deterioration..." and the like Bullard (1990: 43). Stress caused by living in such environments is compounded by environmental discrimination.

This view provides an insight into values as a possible source of environmental injustice. If cities are regarded as inherently valueless or undesirable, then it becomes relatively easy to justify targeting these areas for undesirable land uses. Indeed, Bullard (1990: 121) asserts that "...values are involved in determining *which* geographic areas deserve public investments." (his emphasis).

Marxist explanations regarding values are usually expressed as use value and exchange value. Bullard (1990: 20) adds a further dimension to this explanations classifying neighborhood interests as use value and corporate interests as exchange value.

Criticisms of the values explanations

Political-economy

It is possible to conceptualize environmental racism not just as an isolated phenomenon but as a socio-geographic process positioned within the historical political economy of place (Harvey, 1996). Indeed, Bryant and Mohai (1992: 7) state that "...[e]nvironmental health risks are inextricably linked to political economy of place, where political and economic power are key factors which influence the spatial distribution of residential amenities and disamenities."

Harvey (1996, 1999) makes the same assertion. Bolin (1998: 40) also draws on the perspective of political economy, to examine vulnerable communities. He states that it addresses "...more general issues of land degradation produced by political, economic and social marginalization in the context of 'development'." Marxist explanations of environmental injustice draw together the preceding two theoretical positions - economics and values, into a comprehensive understanding of how economic forces operate to perpetuate disadvantage, maintain the dominant ideology, and reinforce values that act in a hegemonic fashion to support Capitalist agendas.

From the Marxist perspective, environmental injustice is considered to be a product of the Capitalist mode of production. It is characteristic not just of industrial cities, although it is more clearly evident in such cities, but can be observed in virtually any Capitalist urban setting. For example, the appalling sanitation that was characteristic of 19th. Century cities – the burden of which was disproportionately borne by the poor, was actually perpetuated in some instances by legislation that protected real estate values of wealthy residential areas. The segregation laws of Baltimore are one such case.

Madanipour, (1998: 86) argues that "Large-scale developers and financiers expect their commodities to be safe for investment and maintenance, hence their inclination to reduce as much as possible all the levels of uncertainty which could threaten their interests". Thus, in the case of urban revitalization, the provision of housing for low-income earners, and the stigma that it carries, could lead to a loss of investment in the development. It is therefore not surprising to find that levels of low-income housing in urban revitalization projects are minimal or non-existent. Indeed, Bartley (1996: 148) argued that a principal function of town planning is to isolate the working class, and in doing so, to fragment class aspirations.

Criticisms of political-economy

Socio-geographic manifestations of environmental injustice

Within the above theoretical framework it is possible to review the literature on environmental injustice from a critical viewpoint. In order to do so, it is useful to examine the socio-geographic expressions of environmental-racism, applying the three theories, to test which account offers the most consistent explanation. The socio-geographic manifestations recognized in the relevant literature can be bundled into relatively discrete categories. These are intentional targeting, demographic transition, urban encroachment, institutional discrimination, city revitalization and selective remediation[13]. In praxis, these categories are often interwoven and they should thus be viewed as a typology rather than as being mutually exclusive phenomena. The following discussion is supported by case study examples from the literature on environmental justice.

[13] I first developed the idea of selective remediation during the course of a conversation with Ms. Kath Broderick from the Water and Rivers Commission in Western Australia. Kath suggested that similar processes were at play in the way the Commission addressed contaminated groundwater. I therefore wish to acknowledge Kath accordingly.

Intentional targeting

This form of environmental injustice occurs when a corporation, government agency or in some cases both of these parties, deliberately selects a site for the location of a noxious land use within a vulnerable community or neighborhood. As Bullard (1990: xiv) notes "[I]n all cases, the residential character of the neighborhoods had been established long before the...facilities invaded the areas." Not only are the residents unable to effectively resist the location of the noxious land use, they are also effectively trapped within the polluted neighborhood unable to leave because of their social and economic circumstances (Hurley, 1995: 126). Those who can afford to leave do so, "voting with their feet" effectively exacerbating the number of people of color and low-income residents exposed to pollution (Bullard 1990, 6, 128). This has lead Lawson (1995: 49) to describe the practice as "the colonial model of urban planning".

Case Studies – California, Nova Scotia, Louisiana

There are several commentators who have identified cases of intentional targeting. These include Bullard (1995b), McCurdy (1995) and Wigley and Shrader-Frechette (1995). The most infamous example of this, often cited in environmental justice literature, is that of the firm Cerell Associates. Bullard (1995b) reported that in 1984 Cerell Associates recommended to the California Waste Management Board that waste incinerators should not be located in close proximity to more affluent neighborhoods because they are more able to mobilize effective resistance. (Bullard, 1995: 78). The logical conclusion from this was that incinerators should be located within minority neighborhoods because they would offer the least resistance and would therefore be a safer political option (Wright ,1995: 59).

The second example is drawn from McCurdy's (1995) investigation of the distribution of waste and race in Africville - Nova Scotia, Canada. McCurdy found that decision-makers had intentionally targeted a predominantly African-Canadian community for the disposal of hazardous waste and for the location of noxious or undesirable land uses. He states (1995: 80) that "Africville...had been designated for future industrial and harbor development." The community, settled by people of color in the 1840s, was originally free of noxious land uses. However, over the following 110 years Africville was targeted for a variety of unwanted land uses.

McCurdy reports that it started in 1855 with the construction of a railway line through the town, driving down property values. Over the coming years sewerage disposal pits, a hospital treating infectious diseases, a municipal land fill, an industrial facility for oil production and storage, a fertilizer plant, a rolling mill, two abattoirs, a coal handling facility, a tar factory and a tannery (McCurdy1995) were added to the town. They were joined by a stone crushing facility, a foundry, a prison and a cotton mill. It is evident that the community was formally targeted for an industrial park by town planners responding to powerful industry lobby groups.

To make matters worse, the community was denied basic facilities such as rubbish collection, law enforcement, paved roads and fire fighting (McCurdy, 1995: 83). Africville was eventually was rezoned and the residents were relocated to other segregated neighborhoods, "...despite their pleading for the preservation of their community." (McCurdy, 1995: 84). No account was ever made of the governments actions not was compensation paid to the victims.

However, the site was never developed, and according to McCurdy (1995: 89), it is now being considered for remediation and redevelopment for affluent housing.

The third example is that of a uranium enrichment facility proposed by Louisiana Energy Services. Wigley and Shrader-Frechette (1995) in their investigation of the proposal found that the company deliberately targeted "...an economically depressed area with high unemployment, poor rates of high school completion, and low per capita income." (Westra and Wenz, 1995: xx) The two communities that met these criteria were Center Springs and Forest Grove, neighborhoods that were predominantly African-American. The environmental impact assessment statements (EIS) developed by the company were found to be deficient and in many cases deliberately misleading.

Wigley and Shrader-Frechette (1995: 142) found three ethical failures in the EIS including violation of free and informed consent principles (refer to chapter 6) and principles of distributive equity. Furthermore, the targeted communities were never consulted in the preparation of social impact assessment statements and these documents were also found to be misleading and characterized by incorrect information Wigley and Shrader-Frechette (1995: 147). Additional problems with the social impact assessment process included selective sampling of communities (deliberately excluding many vulnerable communities from consideration), reliance on old and misleading data, and the process "...did not actually take into consideration the opinions of the communities that would actually host the [facility]".

Demographic transition

The second form of environmental injustice can be seen as the product of demographic transition. It occurs when a hazardous land use is originally located outside of a community comprised of people of color and / or low income earners. However, due to a change in the socio-economic composition of the neighborhood, people of color and /or low-income residents are concentrated in the neighborhood, resulting in the disproportionate impact of pollution. There are three possible causes of the population transition and the first two are closely related.

The first cause is attributed to changing land values. The siting of the hazardous facility devalues residential properties leading to the flight of the more affluent, thus making houses available to those who previously were unable to afford them – people of color and low income earners. The movement of additional non-white or impoverished residents into the neighborhood concentrates their population resulting in a disproportionate burden of pollution being carried by that population (Westra and Wenz, 1995: xix).

The second explanation is based upon the characteristics of workers at hazardous facilities and their choice of a residential location. Many blue collar workers working in hazardous industries reside close to their place of employment to reduce journey to work distances and cut transportation costs. In general, workers employed in the most hazardous jobs within industry are people or color or low income earners. These workers, with poor access to public transport and inability to afford private cars, move into the neighborhoods surrounding the facility to be closer to their place of work. The result is a disproportionate impact of the facility on people of color and low-income earners.

A third explanation is provided by Hurley (1995) in his account of inequality in Gary, Indiana. In Hurley's words, "...the evolving social geography of pollution was a product of demographic change, particularly the differential ability of citizens to relocate to remote suburban communities." (1995: 154). The following case study is taken from Hurley (1995).

Case study - Indiana

Hurley describes the early history of the town as being characterized by widespread pollution. Virtually all of the neighborhoods in Gary were affected by air pollution from the nearby Steelworks. Indeed, the smoke belching from factory chimneys was seen as a sign of progress (Bullard, 1990: 29). However, following the rise of middle class affluence in the 1950s, new neighborhoods were developed beyond the polluted areas. There was a subsequent flight of the affluent middle class from the polluted inner city to outlying cleaner suburbs. People of color and low income earners, unable to afford to relocate, were left behind to bear a disproportionate burden. Orser (1991) notes a parallel process in Baltimore, which is discussed in greater detail in chapter 5.[14]

Hurley (1995: 124-126) notes that in the 1960s there was a white "...monopoly over the most desirable residential properties in Gary, Indiana." Indeed, Hurley (1995: 124) asserts that:

> *"In a city where the absence of industrial features constituted one of the most precious environmental resources, this meant that blacks [sic] who wished to move out of Midtown had to settle for housing in some of Gary's most polluted neighborhoods."*

When people of color did manage to purchase houses in more affluent neighborhoods, it invariably triggered a second wave of flight as many racist white families fled the so-called "black threat".

Urban encroachment

Environmental injustice can also be the product of urban expansion. Although hazardous sites may initially be located on the periphery of the city, the encroachment of residential areas, usually through suburbanization, may result in disproportionate exposure for people of color and low income earners. Land surrounding the hazardous sites invariably has a lower value due to its poor residential amenity. It is often developed for affordable housing, which is attractive to people of color and low-income earners because they are unable to afford to live elsewhere. This results in the creation of a neighborhood with a concentration of people of color and low-income earners, who then bear the disproportionate burden of pollution. The following case study of West Dallas – Texas clearly illustrates this process.

Case study - Texas

Bullard (1990: 46-50) identified a case of environmental injustice resulting from urban expansion in West Dallas – Texas.[15] The community he investigated was originally a "...rural black[sic] settlement on the fringe of the city." The settlement was already subject to solid waste dumping. Over time, several lead smelters located in the West Dallas neighborhood, although

[14] Similar accounts are given by Bullard (1990: 26) and Bryant and Mohai (1992: 7).

[15] This case study reflects not only urban expansion but also institutional racism. However, the latter form of injustice is discussed under that particular rubric.

one in particular - the RCR smelter, had been operating since 1934 prior to suburban development. At the time of its inception the smelter was located some distance away from residential areas. However, according to Bullard (1990: 46), in the 1950s the Dallas Housing Authority, taking advantage of cheap land in proximity to the smelter, constructed 3 500 low-income housing units directly down wind of the complex. Indeed, he states that many of the original houses in the nearby settlement "...were torn down as a "slum clearance" to make way for the massive public housing development." Residents in the complex were subject to high levels of lead pollution "...for five decades..." and children had extremely high blood lead levels as a result of lead pollution well above those levels prescribed by city ordinances.

According to Bullard (1990), although city officials became aware of the problem 1972, no action was taken until 1974, when, following resident action, the company was sued for failing to comply with the city's pollution ordinances. The suit was settled and the company was fined and ordered to install pollution abatement equipment. However, the company continued to violate city ordinances and failed to install pollution control equipment (Bullard, 1990: 50). Yet city officials took no action. In 1981 residents again partitioned city officials to enforce pollution control legislation. Despite continued pressure from resident groups and the press, city officials were recalcitrant. Indeed, city officials favoured the option of relocating the residents rather than closing the smelter (Bullard, 1990: 49). It was not until 1984 that the smelter was permanently shut down by the Dallas Board of Adjustments – the "...agency responsible for monitoring land use violations." (Bullard, 1990: 50) In addition to failing to enforce pollution control laws, the city had failed to enforce zoning ordinances. The smelter had actually been operating illegally - outside zoning ordinances and without necessary approvals, for decades. It was therefore also a clear case of institutional racism.

Institutional discrimination

It has been well documented that banks, financial institutions, real estate agents and others discriminate against people of color and low-income earners (Bullard, 1990, Harvey, 1991: 244).[16] Indeed the above case study illustrated the way that negligence on the part of town planners resulted in the prolonged exposure of people of color to lead pollution – an act tantamount to institutional racism. This form of environmental justice results from agenices including municipal and state governments, corporations and lending institutions either deliberately or unintentionally preventing residents in vulnerable communities from escaping their plight. For example, Harvey (1991: 244) has noted that the actions of Maryland National bank in "...its lack of concern for low- to moderate-income inner-city neighborhoods [has had the effect of]...promot[ing] the deterioration of housing conditions for the less well off, and so prepare[s] the way for more urban development and gentrification."

Case studies – Ohio and California

There are several more examples of the ways that institutions like banks operate to perpetuate environmental injustice. The first is that of Evanston, Ohio examined by Phillips (1995). During the course of his investigation of an explosion at a toxic and hazardous treatment disposal and storage facility – run by BASF, Phillips noted that there was a clear prejudice on the

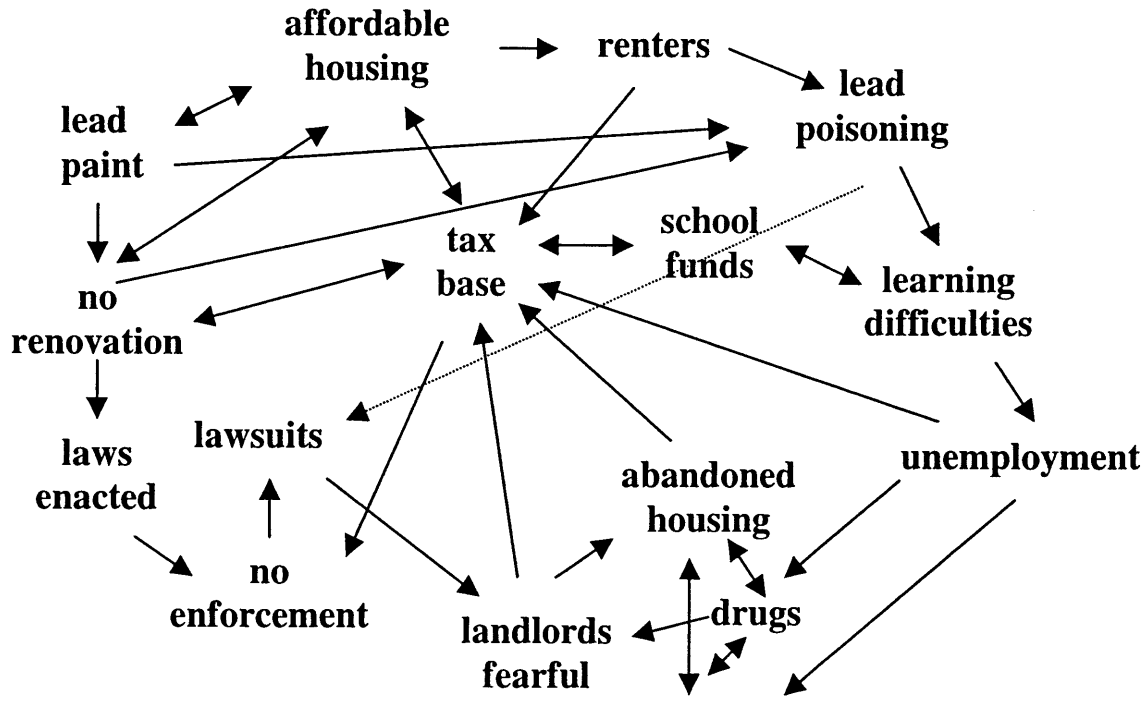
[16] Bullard (1990: 99) has documented other cases of lead poisoning in the inner city, as a result of lead paint in older houses, where institutional policies and process have trapped residents in polluted environments.

part of local decision-makers against people of color. Many hazardous compounds were either stored or produced on-site, ranging from arsenic to zinc. Yet, Phillips found that whilst a buffer was provided between the facility and the adjoining white residents in the city of Norwood, no buffer was provided between the plant and the adjoining African-American community in Evanston (1995: 102). Furthermore, additional facilities that were predominantly used by the African American community including a home for the elderly, a school and playgrounds, were situated in close proximity to the hazardous plant.

Following the explosion, residents in Evanston were not evacuated, yet residents in Norwood, further away from the facility were ordered to leave. In addition, relief was immediately made available to the white residents in Norwood long before it was provided to the people of color in Evanston (Phillips, 1995: 103). Other discriminatory practices found by Phillips included: a failure by authorities to warn the Evanston residents of the nature and extent of the accident; a failure to document, and advise residents of, escape routes (even though such routes had been provided for nearby Norwood residents; and haphazard complaints investigation procedures of city officials.

Lead paint poisoning

A second case study example is that of lead paint poisoning. The problem of lead paint is comprised of a complexly intertwined constellation of social, economic and environmental issues related to housing. These include: declining tax bases in inner city suburbs; the judicial dilemma for landlords of renovate; be sued or abandon properties; absentee landlords; the link between schools and the local tax base; government regulation; bank lending policies and the plight of the poor. These issues are illustrated in **Figure z** below. Perhaps the main problems are achieving consensus on who should be responsible for the cost of lead paint abatement (Bullard, 1995b: 16; Sargent et al, 1999: 1690) and the flow on effects of enforcing legislation requiring lead abatement, which often exacerbates the very problem that it was supposed to fix.



Source: Author (1999).

FIGURE Z – INTERCONNECTEDNESS OF LEAD AND HOUSING PROBLEMS

Bullard (1995b: 12-13) asserts that "[l]ead poisoning is correlated with both income and race." Sargent et al (1999: 1691) support such an assertion noting that "[b]ecause poor people frequently have no choice but to live in the oldest and most dilapidated housing, poverty has long been associated with childhood lead poisoning."

Public health researchers have recently found that lead paint abatement programs in Massachusetts have been successful in reducing lead levels in children (Sargent et al, 1999). They attribute this to

Bullard reports that although the United States Public Health Service adjusted safe lead exposure lead blood levels from 40 micrograms of lead per deciliter in 1971 to 10 micrograms of lead per deciliter in 1991, little was done to address the new standard. Indeed, according to Bullard (1995b: 13), the federal government of the United States abrogated its role to address lead paint treatment in inner city houses. These houses are disproportionately occupied by people of color and low income earners and Bullard notes that "...among families earning less than $6,000, 68 percent of African American children had lead poisoning, as opposed to 36 percent of white children." (Bullard, 1995b: 13). Furthermore, Bullard states that "[e]ven in families with annual incomes greater than $15,000, 85 percent of urban African American children have unsafe lead levels, compared to 47 percent of white children."

Bullard (1995b:13) asserts that although the Bush administration announced plans to reduce lead exposure for children, the testing of houses for lead, disclosure of results by owners, and establishment of clean up standards was not seen to be the responsibility of the federal government. Furthermore, Bullard argues that the Bush administration, pressured by the National Association of Realtors who feared that pollution abatement measures would detrimentally affect land values, relaxed its aggressive stance on lead paint remediation (1995b:13). However, the federal government is not the only instrumentality to fail to enforce its laws, leading to environmental injustice.[17] Bullard documents further examples including the state of California failing to undertake "...federally mandated [blood] testing..." (Bullard, 1995b: 15).

City revitalization / redevelopment

The penultimate category of environmental injustice is that of urban revitalization. The process of gentrification often compounds the impact of environmental discrimination upon people of color and low-income earners. As contaminated sites within inner city neighborhoods are remediated, land values increase and impoverished communities are displaced (Laituri and Kirby, 1994: 123). In many cases the remediation of a site requires considerable works. It may necessitate the demolition of building and removal of soil for off-site decontamination. In such

[17] Bullard (1990: 100) also documents examples of the imposition of uneven penalties under hazardous waste laws throughout several states in the Southern United States.

circumstances residents living in these areas must relocate. Once the site has been "cleaned up" property developers often seek to establish higher income housing, exclusive residential estates and "life style neighborhoods" such as golf courses and marinas thus recovering the cost of remediation. These estates are indeed "exclusive" as it is seldom the case that provision is made for lower income housing or the creation of mixed neighborhoods.

Case study

Selective remediation

This final category of environmental injustice addresses the uneven remediation of contaminated sites. Bullard (1990: 100) describes accounts of disparity under toxic waste laws whereby low-income areas are remediated to a lesser standard than affluent areas and take longer to be recognized under the relevant legislation. He states that "[a]t white sites, the EPA ordered treatment 22 percent more often than it did containment." (Bullard, 1999: 100)

Case study

Appraisal of the empirical research

How planners justify the unjust

Schrader-Frachette (1995) identifies four common justifications for environmental injustice. They are the social process argument, the countervailing benefit argument, the consent argument and the reasonable possibility argument.

The countervailing benefit argument

Environmental blackmail

A major criticism of economic explanations is that they can lead to arguments that reinforce racial prejudice or class discrimination. Those who suggest that vulnerable communities should accept polluting land uses because they lead to job creation succumb to the false assertions of what has been termed "environmental blackmail" (Bullard, 1990: 10). People who promote these arguments believe that "...employment [should be] viewed as a possible trade-off for having [an] industrial facility nearby." (Bullard, 1990: 84). Although employment is often touted as a solution to problems of social exclusion (Allen et al, 1998) in the area of environmental justice it can represent just as much a problem.

According to Bullard (1990: 76), 60 percent of household heads surveyed in communities he was investigating had incomes less than US$15 000 and were employed in blue-collar occupations "...making them likely targets of environmental blackmail". These people lived in communities "...beset with rising unemployment, extreme poverty, a shrinking tax base, and decaying business infrastructure." (Bullard, 1990: 84). Yet Bullard also notes that many corporations receive tax concessions to operate in these areas, but "...few permanent jobs [result]

from these exemptions."(Bullard, 1990: 105) The sad reality is that the proponents of such trade-offs are often corporations with a vested interest, preying on the fears of vulnerable residents. The siting of hazardous land uses in such communities worsens rather than improves their plight. Indeed, Bryant and Mohai, (1992: 6) assert that "...long term health effects from polluted environs may mitigate against short-term economic gain."

An analogous argument is also sometimes used to justify the siting of undesirable land uses in vulnerable communities. It is based on the premise that the standards under which industries operate should be relaxed, as tougher sanctions against corporations wishing to locate in vulnerable neighborhoods will result in a detrimental impact on employment.[18] Bullard (1990, 10) strongly refutes these arguments. In the course of his research into many southern American communities he found that whilst corporations and governments were quick to promise jobs in exchange for the siting of hazardous land uses, these jobs were in reality rarely, if ever, forthcoming. Bullard argues that where jobs were created, they were taken by a highly trained, technical, outside labor force. Research undertaken by Wigley and Shrader-Frachette (1995) supports Bullard's assertions.

In attempting to refute claims of environmental racism, Boerner and Lambert (1995: 67) inadvertently provide an excellent example of economic blackmail. They (1995: 68) argue that one way to rectify environmental racism is to ensure that the costs of pollution are borne proportionately by all those who benefit from polluting land uses. They assert that this can be achieved in three ways. The first option is to ensure that industrial processes do not create pollution. The second is to allocate the costs evenly throughout society and the third is to compensate those who are affected by pollution. However, they (1995: 69) contend that the first two options are not feasible. Boerner and Lambert (1995: 69) state that eliminating pollution is too expensive, probably impossible and would "eliminate many valuable products and processes that Americans take for granted."

It is their Boerner and Lambert's assertion (1995: 70) that "...some pollution is inevitable in modern society." As an example they cite the use of pesticides and all the benefits derived from them and the costs to production that would result from their elimination. They state that increased costs from lost production would impact disproportionately on the poor who spend more of their income on food, but neglect to note that these are also the very people who most often work as farm laborers and who are often poisoned by pesticide use (Macey, 1998: 48). Bryant and Mohai (1992: 7) would refute the claims of Boerner and Lambert, noting that "[t]hose who are most vulnerable to environmental insults are among the millions in this country [the United States] that are the least able to afford health insurance."

The second remedy suggested by Boerner and Lambert (1995) is based on regulating the siting of polluting land uses to ensure that they do not disproportionately impact on people of color and low income earners and imposing penalties on industries that do not remediate contaminated sites. Boerner and Lambert (1995: 73) allege however, that these proposals to date have had little impact.

[18] Indeed, Bullard (1990: 24) notes that, in an act of blatant hypocrisy, many corporations now actively avoid locating in inner city areas within American cities to avoid perceived problems such as violence, crime, vandalism and congestion.

The third option, and the one most favoured by Boerner and Lambert (1995: 74-80) is that of compensation. In reality however, it amounts to little more than "economic blackmail" (Lee, 1993: 44). They frame the solution as poor people accepting "...comparatively small risks in exchange for substantial economic benefits." (1995: 74). In reality however, the risks are more often than not quite large, the costs including cancer, birth defects and other major impacts on human health, and the benefits flowing to those affected are relatively insignificant (Bullard, 1993: 23). Indeed, according to Bullard (1993: 33) for many people of color, "...job blackmail is a fact of life. You can get a job, but only if you are willing to do work that will harm you, your families and your neighbors." Perhaps Wenz (1995: 67) most succinctly captures arguments against economic blackmail when he states: "[a] child dying of cancer receives little benefit from the community's new swimming pool."

The case of Sumter County toxic landfill

Clearly the argument posed by Boerner and Lambert (1995) is misleading. They site Sumter County in Alabama as an example of effective compensation arguing that "...black (sic) officials in Sumter County are apparently quite happy hosting the landfill." Yet Bryant and Mohai (1992) and Bailey, Faupel and Gundlach (1993) and provide a starkly different account, detailing political corruption, corporate deceit, institutional racism and economic blackmail. They state (1993: 117) that whilst "...community leaders in Sumter County...either deny or downplay the risks associated with [the landfill] ...emphasising the economic benefits...two surveys indicate that most residents – white and black – are seriously concerned about the hazardous waste landfill in their community."

Whilst Boerner and Lambert (1995: 75) describe the facility as having "millions of dollars of state-of-the art technology" making it "one of the world's safest landfills", Bailey et al (1993: 122) state that independent research has called into question the safety of the facility, protesters have disputed the safety of working conditions (1993: 114) and national environmental organisations have called for its closure (1993: 115). Boerner and Lambert (1995) cite no evidence and provide few references whilst Bailey et al (1993: 108) draw upon "field interviews conducted over a five year period...archival research and two separate surveys."

The account of Boerner and Lambert is at best suspect and at worst intentionally deceitful. It is however, very useful as it clearly illustrates the economic narrative and the way that it justifies the perpetuation of inequality so enabling Capitalist institutions to continue to generate profit at the expense of the working class, whilst telling those detrimentally impacted that these outcomes are in fact 'beneficial thus maintaining dominant power relations. Harvey (1996: 174) notes that:

> *Sophisticated discursive strategies are now in place...Bourgeois institutions have a long history of exercising "repressive tolerance"...a limited articulation of difference can play...a sustaining role for hegemonic and centralised control of the key institutional and material practices that really matter for the perpetuation of capitalist...power relations."*

To paraphrase Harvey (1996: 176), the rhetoric of environmental justice may be appropriated and mobilized for specific acts of social control by those institutions perpetrating acts of environmental racism for the purpose of neutralizing resistance.

The fallacy of proportionality

Another argument that is often cited throughout the literature is that environmental discrimination would be effectively countered if hazardous land uses were more equitably distributed throughout urban and rural areas, affecting both people of color and whites the same. Boerner and Lambert (1995) exemplify this argument. They draw on landfills in Houston, Texas to illustrate their case. They (1995: 76-77) assert that Bullard's (1990) analysis of the siting of landfills in Houston was flawed. According to Boerner and Lambert, although Bullard found that "...nearly all of Houston's landfills [were] located in black (sic) communities" they contend that all the facilities were located in communities with higher percentages of whites when they were originally constructed. They state that "...the number of African Americans as a percentage of the population increased in each of these neighbourhoods..." following construction. "By 1990, all of the seven neighborhoods hosting landfills had a disproportionate percentage of African Americans." (Boerner and Lambert, 1995: 77). They conclude that "Discriminatory siting is not, then, the primary culprit behind these cases of "environmental racism"."

Boerner and Lambert (1995: 77) attribute the high percentage of people of color living in proximity to these facilities to the "dynamics of the housing market". They argue that land values declined following the siting of the facilities because the neighborhoods were "perceived to be less desirable". They assert that a "...radically skewed income distribution, and people's tendency to locate near others who are "like themselves" often causes these areas to have a larger share of non-white residents." What they fail to acknowledge is that it is entrenched power structures enable white residents to seek housing elsewhere and trap people of color in neighborhoods subject to pollution. Bullard (1990: 27) notes that people of color may have very little choice in housing location. He states that inner city housing in north America is characterized by "eviction and displacement". In addition, people of color living in the inner city are often renters, and this makes it very difficult for them to mobilize against discriminatory siting (Bullard, 1990: 28).The result is still the same. Environmental racism occurs. Harvey (1989) offers an alternative perspective.

Residential differentiation and environmental discrimination

Residential differentiation, rather than being a product of 'people chosing to live near similar people' (Timms, 1971) can instead be attributed to the "basic social relationships pertaining in Capitalist society" (Harvey, 1989: 111). Phillips (1995: 105) makes reference to Burgess model of concentric zonation to explain the location of residential land uses relative to hazardous facilities. Essentially he invokes a variation on the land rent mechanism. He states that "[e]conomics plays a major role in what amounts to a modern form of 'institutionalized environmental racism'."

Why do planners justify the unjust?

Zoning is a dirty word - the hegemonic function of land use planning[19]

Land use planning has been called the bastard child of capitalism (?????). This is because in many instances planning serves not only to facilitate growth and development but planning

[19] Bullard (1990: 73) refers to land use zoning as a dirty word in Houston, Texas as the city has an anti-zoning, laissez-faire philosophy.

instruments also act to protect the interests of the affluent over those of the underclass. Bullard (1990: 8) notes that "[M]inority and low –income residential areas... are often adversely affected by unregulated growth, ineffective regulation of industrial toxins, and public policy decisions authorizing locally unwanted land uses that favor those with political and economic clout." Furthermore, Bullard argues that "[l]and use zoning... is... a protectionist device" and that "[z]oning, deed restrictions, and other protectionist land use mechanisms have failed to effectively protect minority communities, especially low-income minority communities." (Bullard 1990: 8). Furthermore, Bullard (1990: 39) argues that "[l]and use decisions involving the black [sic] community are usually made by individuals external to the community." He asserts that the "[i]mplementation of zoning ordinances and land-use plans has a political, economic, and racial dimension." It is his contention that:

> *In many instances, exclusionary zoning, discriminatory housing practices by rental agents, brokers and lending institutions, and disparate facility siting decisions have contributed to and maintained racially segregated residential areas of unequal quality.*

Thus both planning practices and urban and regional planners stand accused of discriminatory decision-making.

Bullard (1990: 26) argues that exclusionary zoning is enforced by decision-makers who have a vested interest in keeping their own neighborhoods free from undesirable land uses even if it is at the expense of vulnerable communities. He (1990: 81) states that:

> *It is not unusual for land use decisions to flow from zoning boards that are top-heavy with developer and real estate interests. Siting decisions may make more political sense than economic sense. Low-income and minority neighborhoods in many cases find themselves in the direct path of expanding industrial markets. More often than not these same neighborhoods lack the political clout to direct the expansion away from their residential areas.*

An examination of the membership of city Councils in Perth and of the Western Australian Planning Commission reveals that there are no Aboriginal members represented on these boards, nor have there been in the history of planning within the State. Indeed, similar patterns are found in Baltimore. Representation then becomes an important factor in counteracting incidents of environmental injustice.

Chapter summary

CHAPTER 3 RESEARCH DESIGN

"Noxious facility siting and cleanup decisions involve very little science and a lot of politics." Bullard (1995b: 23).

Chapter outline

The project is based on a qualitative research methodology. Ethnographic research methods will be used to obtain information from people of color and low income earning families about the ways that land use planning, urban policy and pollution from undesirable land uses impact on their lives. Such techniques include in-depth interviews and observation. Interviewees will be asked what they perceive the merits of various policy solutions are. It is also proposed to interview land use planners and decision-makers, to compare their views with those affected by environmental racism.

Relative merits of primary research methodologies

Quantitative research

Qualitative research

Justification of research style

Quantitative research

Data collection

Census data

Rudimentary GIS analysis

Qualitative research

Text analysis

A literature review will be undertaken to investigate the relevant material available on the subject. Sources include historical records, newspaper articles, census data, government publications, community information brochures and pamphlets, books and journals.

The methodology also draws on the work of Colton (1990), Fitton (1992) and Beckwith (1996) who have compared the siting of hazardous waste facilities and racial and social economic characteristics, and Schlossberg (1995) who discussed the merits of using GIS and census data to evaluate environmental inequity. This will establish the areas in Baltimore from which the sample of interviewees will be drawn. The sampling process will use informed, stratified, sampling.

Ethnographic interviews

Interviewees will be selected by examining data on population, comparing it to the location of hazardous waste and contaminated sites, and selecting representative individuals from Baltimore based on the proximity of such sites to their residential or employment locations. The interviews will be transcribed and extracts will be used to provide evidence for these assertions.

Selection of participants

The methodology for selecting participants was based on informed stratified sampling (Byrne, 1998). An illustration of this method is provided by Bullard (1990). It essentially entailed targeting community leaders, town planners and policy professionals who had a knowledge of the sites under investigation based on a knowledge of their actions or on recommendations from others who knew them. Bullard (1990: 18) refers to this method of selecting a sample population as a "reputational approach".

Interview questions

Data collection

Recording the data

Protocols

Measuring environmental quality

Paul Knox (1986?) devised a qualitative methodology for assessing environmental quality. His assessment method relied on rating urban areas based upon a set of discrete criteria and then calculating an overall score for the environmental quality of that area.

Knox methodology is flawed in several ways, not the least of which is his Eurocentric bias. It is also biased by suburban values. However, it does provide some useful insights into how a system might be devised for local residents to evaluate the environmental quality of their neighborhoods.

Quality of life indicators

The State Government of Western Australia has attempted to develop quality of life indicators to assess the quality of Perth's neighborhoods and to provide basic standards for the design of future residential developments. These indicators also reflect a suburban bias.

Possible weaknesses of the methodology

Criticisms of empirical research

Some commentators contend that past research into environmental racism has been biased by "serious methodological difficulties" (Boerner and Lambert, 1995: 65). The first is

allegedly due to the use of particular methodologies and techniques of comparative analysis that bias the results (Anderton et al, 1994) as researchers did not control background variables and regional variations (Pollock and Vittas 1995: 296). Such variables include the combination of different racial groups rather than distinguishing particular minorities or limiting investigations to particular hazardous facilities and excluding others (op. cit.).

The second criticism relates to scale. It is purported that the use of zip codes exaggerates the incidence of contaminated sites in minority areas and that analysis of data at the census tract level produces "aggregation errors" (Pollock and Vittas 1995: 296, Boerner and Lambert, 1995: 66). It has also been noted that the use of old census data by some studies has created a "temporal mismatch between demographic and pollution measures." (Pollock and Vittas 1995: 296).

A third criticsm has been directed towards the methods used to define "communities" (Boerner and Lambert, 1995: 65). It has been alleged that the use of proportionality (percentages of populations) to define minority communities is flawed. Furthermore, researchers have been criticised for ignoring population densities and for failing to differentiate between exposure to harmful substances and actual incidents of harm (op. cit.). Indeed, Boerner and Lambert (1995: 67) even go so far as to assert that these risks associated with contaminated sites and the storage and disposal of toxic substances are minimal:

> *"...conditions far more unhealthy than the minute risks associated with waste disposal facilities and industrial plants."*

This more extreme position is tantamount to environmental fascism and reeks of bourgeois imperialism. Boerner and Lambert (1995: 69) assert that none of the empirical studies into environmental racism "...prove that the siting process actually caused the disproportionate burden that the poor and minority communities *purportedly* now bear." (my italics). They even recast such facilities as "...socially beneficial projects" (Boerner and Lambert, 1995: 68).

Whilst Pollock and Vittas (1995: 295) reported that the examination of a nationwide database "...found no relationship between the racial composition of census tracts and potential exposure to toxic wastes" they offer an alternative explanation for these observations. First, they assert that previous investigations lacked a "valid measure of the sources of pollution". Second, they contend that the studies they examined "understated the presence of harmful environmental substances." Pollock and Vittas 1995: 297). Finally, they argue that the use of a model to describe the relationship between proximity to sources of contamination and the likelihood of exposure confirms the prevalence of inequituous siting of hazardous facilities. This they verified following the use of regression analysis to account for background variables including the degree of urbanisation, population density, employment patterns, median rent, housing values, and median house age. Pollock and Vittas (1995: 305) concluded that the "...differential affects of race and ethnicity are not simple artifacts of occupational and housing patterns" and that "African Americans and Hispanic households are much more likely than whites...to live near TRI [toxic release inventory] facilities."

Strengths of the methodology

Controlling for bias

All ethnographic data will be made available upon completion of the project. Confidentiality of interviewees will of course be guaranteed.

Two case studies will be used to illustrate the ways that policy decisions result in environmental racism – one a large residential re-development site, formerly the site of a gas works depot in East Perth, Western Australia, and the second a similar site in Baltimore, to be selected upon arrival.

The theoretical background supporting the methodology will be derived from several disciplines including urban anthropology, urban geography, urban and regional planning, ecology and environmentalism and social psychology.

Chapter summary

CHAPTER 4 DATA ANALYSIS

...some have grown fat, some have grown rich by the aggression and destruction of others." Du Bois cited in Phillips (1995: 106).

Environmental degradation takes an especially heavy toll on inner-city neighborhoods because the "poor or nearpoor are the ones most vulnerable to the assaults of air and water pollution, and the stress and tension of noise and squalor." Bullard (1990: 6) citing Zwerdling, 1973.

Chapter outline

Quantitative analysis

Qualitative analysis

Methodology for analysis

Coding the transcripts

Checking for consistency

Sorting the themes

Categorizing the themes

Identifying dominant categories

Overview of responses

Chapter summary

CHAPTER 5 DISCUSSION

> *"Rich neighborhoods routinely use lawsuits to block unwanted land uses that would sully their area, while the poor who cannot afford lawyers must put up with all kinds of non-residential uses next to their homes. Exclusionary zoning has been the major control of unwanted activities and undesirable land uses."* (Bullard, 1990: 81)

> *"While the ...buyout enabled residents to gradually escape their "toxic trap" it also brought the disheartening loss of an actual community of neighbors and social networks rooted in a particular location and built up over decades. ...In the end there is no adequate compensation for the loss of a functioning community."* (Capek, 1993: 20)

Chapter outline - two cities and their tailings (a comparative analysis)

It is clear from the discussion of literature in chapter 2, that for well over a decade environmental injustice has been recognized as problematic in the United States. The evidence of the disproportionate impact of contamination upon people of color is well documented. Bullard (1990) has identified cases in Texas, West Virginia, Louisiana, Carolina and Alabama; Pollock and Vittas (1995) have found evidence of environmental racism in Florida, and Boerner and Lambert (1995) document disputes in Mississippi and Alabama. In Australia however, identification of instances of environmental injustice has been scarce. For example, Fincher (1998: 65) notes that "...recent debates...about the location of toxic disposal facilities in particular segments of the metropolis, rather than others, have been sparked (amongst other things) by the absence of any apparent view by senior levels of government of distributional or spatial equity."

Why is it that environmental injustice was recognized in North America decades before becoming apparent in Australia? Why have Australian planners failed to see the discriminatory consequences of their decisions? What processes are at work in the two countries that have lead one to take action whilst the other still pretends that nothing is wrong? These are some of the questions that are addressed in this chapter. The chapter commences with an examination of the two countries environmental and planning institutional frameworks, giving consideration to the similarities and differences between environmental and planning approval processes at the federal, state and local levels.

It then progresses to a description of the two case study cities – Perth in Australia and Baltimore in North America, before moving to a detailed discussion of these case studies. Following the case study descriptions and analysis, attention is given to the role of planning in Australia and North America, and the strategies and policy responses that have been followed to address environmental injustice. Particular attention is given to failures and successes, with a view to building on the success stories in the following chapter. This chapter concludes with the lessons learned from Perth that would be applicable to Baltimore and vice versa.

The advantages and disadvantages of urban revitalization

A focus on cities from an integrated environmental justice and ecojustice perspective is timely. There is strong evidence to suggest that cities in Australia, New Zealand, Canada, the United States and the United Kingdom, are experiencing a trend for a return to inner-city living. This is however, occurring in a context of far-reaching changes to international labour relations and a dominance of the wealthy, young, single and DINK (dual income, no kids) residents in inner-city areas. The remediation and redevelopment of former industrial sites within inner city areas often perpetuates injustice. The redevelopment of former inner-city industrial sites, and subsequently their conversion into "yuppie Meccas" perpetuates injustice. The wealthy benefit whilst the poor are merely displaced to "somewhere else" – often to places characterized by further hardship and inequity.

In planning for the future city, with the goal of ecological sustainability in mind, it is likely that many gains will be made by retrofitting existing built environments to make them more sympathetic to ecological processes. This is important because significant investments in materials and energy have already been made in these areas and the preservation of these investments represents significant conservation savings. Urban revitalization projects also have the potential to create residential and commercial areas that are ecologically sensitive and socially just. They can do this by producing minimal pollution, being energy efficient and furnishing diverse habitats for other species, as well as providing affordable housing, generating employment and producing facilities and amenities for low-income earners. A brief list of these benefits is tabulated in **Table 1** below, together with evident disadvantages.

Perspective	Advantages	Disadvantages
Ecojustice	• removal of toxic contaminants and other pollutants including bio-accumulating toxins; • restoration of habitat; • preserving ever-decreasing habitat on the fringe of cities by reducing pressure on greenfields sites; • lowering pollution, saving energy and increasing the efficient use of existing urban infrastructure by providing for inner city housing and by reducing car journeys; • possible benefits from the application of innovative technologies such as waste management; • nutrient reduction through wastewater recycling; • water conservation through water sensitive urban design; • energy conservation through efficient housing design, recycling of existing built form, the use of renewable resources and the use of alternative energy sources.	• increased density creates additional hard surfaces increasing stormwater runoff and the pollutants contained therein; • pollutants may be mobilized during site remediation; • ecological standards may not be deemed profitable due to high costs of pollution abatement and treatment; • loss of habitat due to the desire to maximise the developable area; • ecological objectives may not be seen as compatible with the cultural values (e.g.) that people do not want snakes in their front yard or birds fouling their attractively landscaped pond.
Environmental justice	• removal of pollutants that pose a public health risk; • opportunities for the provision of affordable housing;	• increased land values may displace vulnerable residents; • the profit motive may reduce the

Perspective	Advantages	Disadvantages
	• increased choice in housing style; • improved amenity in the neigbourhood thus benefiting nearby poor residents; • improved facilities for residents such as shops, open space or schools; • the prospect of increased jobs in traditionally depressed areas.	provision of affordable housing; • communities may be fragmented if residents are displaced by redevelopment; • there may be preferential treatment for wealthy residents compared to nearby poorer residents including the provision of local services etc. • the skills and training of former residents may render them uncompetitive in the new information technology and educational jobs that often characterize workplaces in the redeveloped areas.

Table 1 – The Advantages and Disadvantages of Urban Revitalization from the Social Justice (environmental justice) and Justice to Nature (ecojustice) Perspectives

Environmental planning in Australia and North America

Australia

Australians are among the most urbanized people in the world. Eighty five percent of the population live on less than 0.1 percent of the total land-mass of the nation (Collins, 1993: 4). According to Moriarty (1998: 212) approximately 61% of Australia's population resides in the five largest Capital cities.

Environment

Federal (Commonwealth)

State

Municipal

Planning

Federal (Commonwealth)

State

Municipal

FIGURE 2 – THE ENVIRONMENT / PLANNING FRAMEWORK IN AUSTRALIA

North America

Environment

Federal (Commonwealth)

State

Municipal

Planning

Federal (Commonwealth)

State

Municipal

FIGURE 3 – THE ENVIRONMENT / PLANNING FRAMEWORK IN THE UNITED STATES

FIGURE 4 – A CROSS NATIONAL COMPARISON OF PLANNING AND ENVIRONMENT FRAMEWORKS

A North American case study – Baltimore (city of sirens)

At one point in its history, Baltimore was the second largest city in the United States (Lonely Planet, 1998). The city prospered under rapid industrialization and quickly grew to have a population in excess of one million people. However, following race riots in the 1960s and then industrial restructuring in the late 1970s, the city's population began to rapidly decline. At the beginning of the 21st century it is less than 650 000. In order to understand the processes that have lead to environmental injustice in Baltimore, it is necessary to appreciate the city in its historical context.

The city of Baltimore was founded in 1729 (Fee et al, 1991: xii). The economic base of the city was initially dependent upon shipping based trade - in particular international trade in grain, tobacco, sugar and coffee. The city was also a product of mercantile capitalist expansion, with major infrastructure investments in rail, road and canals giving it access in inland markets. It was an important ship building center too. Its early growth is characteristic of what McCarthy

(????) terms a gateway port. However, according to Fee et al (1991: xiii) the city was also supported by a strong manufacturing sector which was established in the 19th Century. From the 1860s to the 1900s, the city's industrial base diversified into textile production, food processing and distribution and heavy industry such as steel foundries, tin, copper and ironware factories, railway construction and machine shops (Op. cit). However, Fee at al (1991: xiii) note that by the early twentieth century, struggling to compete with major centers such as New York and Pittsburgh, the city "...became a branch town, with its financial fate tied to the interests of outside investors."

Fee et al (1991: vii) state that:

> *"[u]ntil recently, Baltimore has been a blue collar city, a city of many laboring women and men and the few for whom they labored. Yet...its official history has been one of patriotism, war and a few powerful white men. ...Baltimore has also been a racially divided city, one with deep racial antagonisms and a vital African American community."*

Race in Baltimore

According to Power (1982), Baltimore experienced rapid urbanization post 1860. He notes that "...between 1880 and 1900 Baltimore's black population increased 47% from 54 000 to 79 000 whilst the white population increased by 54%. African American urbanization occurred in two large bursts. Power (1982: 290) states that "[i]n 1860 only 4.2% of all Negroes in the United States were city dwellers; by 1890 it had risen to almost 20%. However, Fee et al (1991: ix) note that "[o]n the eve of the Civil War, Baltimore had the largest free black [sic] population of any city in the country, and after emancipation, many free black slaves left rural Maryland and came to Baltimore." For African-Americans, this transition from a rural to urban population had negative repercussions. According to Fee at al (1991, xi) "[r]acial segregation both shaped this community and maintained its boundaries. People of different class and income levels, excluded from other parts of the city, shared a common experience of racial discrimination." They assert (1991: xv) that "...race has been perhaps the most profoundly divisive force in Baltimore's history." A similar assertion was made by Powers (1982) who labels Baltimore's residential segregation "apartheid-style".

Race is clearly a pervasive force affecting the quality of life of many non-white neighborhoods. Fee et al (1991: xiv) argue that in Baltimore "[r]acial divisions in the workplace were replicated by law and custom in housing, schools, churches and most other public and social institutions." Power (1982)

Fee et al note that in the 1950s, African Americans constituted almost 25 percent of Baltimore's population. By 1985 this proportion had reached sixty percent. At the same time, 24 percent of the city's population was below the poverty line.

Urban revitalization

The United States was the first Western nation to attempt to revitalize its blighted inner city areas through a program of urban revitalization based on property development. However, urban renewal per say can clearly be attributed to the United Kingdom, as a post Second World War slum clearance set a trend for massive transformation of inner city residential areas. According to Cameron and Davoudi (1998: 241) though, "...international fashion for waterfront

regeneration [began] in the USA." These developments became a model for the United Kindom under the Thatcher government (Cameron and Davoudi, 1998) and later for Australia. The revitalization of blighted inner city sites was touted as the cornerstone of successful policy to overcome Baltimore's post-industrial woes.

Harvey (1991: 233) notes that:

> *"[t]he city, it was argued, would receive two main benefits from such development: The increase in employment would help the city's economy, and the increase in the tax base would provide the city with more resources to meet the needs of its poor. ...Unfortunately, [t]he city received very little benefit from it. Much of the new downtown employment...went to residents of the suburbs. ...Moreover, ...[it] was so heavily subsidized that it was a drain on, rather than a benefit to, the city's tax base."*

In addition, amidst a wave of 'civic boosterism" based on the revitalizing inner harbor area, Harvey reports that dissent was not tolerated. This was so much the case that when "...excessive cancer rates were reported in a neighborhood long exposed to chemical wastes, the mayor criticized those who did the reporting because they had sullied the city's image." (Harvey, 1991: 233).

Much of Baltimore's revitalization has been funded from public sources. Harvey (1991: 239) identifies a "vast public subsidy" where the first stage of the inner harbor development,costing US$270 million was "90% funded from the public treasury...".

There has been a large-scale project of gentrification around the inner harbor. Harvey (1991) draws attention to the number of condos and luxury apartments that have been constructed around the waterfront. Some industrial sites, such as that of Allied Chemicals are touted for redevelopment dependent upon the ability of proponents to remediate chromate contamination (Harvey , 1991: 241). This then is the context in which Baltimore must be understood.

The Inner Harbor Renewal Project

The revitalization of Baltimore is an often cited as an example of an international model for urban renewal, particularly for degraded former industrial sites (Harvey, 1991: 237). For example, Dutton (1991: 18 & 19) states that:

> *" In the 1950s Baltimore had a down-at-heel business center and an adjacent harbour which comprised rotting wharves, flophouses, warehouses and railroad yards. A renaissance was achieved by what is now regarded as the epitome of public-private partnership. The fruits of this 30 year initiative are clearly evident. ....The program has seen 1,000 properties acquired, 750 businesses relocated, 90 major new buildings constructed or recycled in 27 years, $140 million invested in Federal buildings, increased real estate tax revenues to the tune of $25 million per year, the creation of 30, 000 permanent new jobs, seven million Inner Harbor visitors per year spending more than $800 million, and 31 national or international awards for design excellence."*

The sheer scale and cost of the redevelopment is staggering. Although the project is comprised of three stages, redevelopment actually commenced in 1964 with the "Charles Center" downtown redevelopment. That project was instigated as a precursor to the major inner harbour redevelopment, whilst a US$225,000 master plan for the overall 300 acre (121.4 ha) inner harbour project site was being prepared (Dutton, 1991: 18). The Charles Center site, was

33 acres (13.3ha) in area. A total of 330 properties were acquired of which 225 were demolished to provide for "...two million square feet of offices [185,806 m^2], 400 apartments, 430,000 square feet [39, 948.4 m^2] of shops and a hotel...and 4,000 underground car spaces." (Dutton, 1991: 18) The total cost of this development was US$185 million of which A$45 million was public funding and A$145 million private investment (Harvey, 1991: 233).

Despite the supposed benefits that would be derived from the redevelopment – increased employment and an improved tax base, Harvey has criticized the Charles Center project as being poorly conceived - directly benefiting only corporate and finance capital. He states that "...much of the new downtown employment, particularly in skilled and well-paying jobs, went to the residents of the suburbs. The jobs created for city residents were either in temporary construction or low-paying services." (Harvey, 1991: 133) A similar pattern occurred with the inner harbour redevelopment.

The principal project, the inner harbour redevelopment, is 240 acres (97.1ha) in area (excluding the water component of the harbour). The first stage to be redeveloped was a 95 acre site (38.4 ha). It was comprised of the 32 storey World Trade Center tower, the Maryland Science Center, the Harborplace Development, the National Aquarium, two glass shopping and eating pavilions (with a floor space of 250, 000 square feet - 23 225.8 m^2) a 500 bed Hyatt hotel, and open space (Dutton, 1991; Harvey, 1991). The second stage was a 68 acre (27.5ha) site on the western side of the harbour. Development was comprised of a convention center, a hotel, a festival hall and middle to upper income housing. The third stage, recently completed, was comprised of a new baseball stadium – which made use of a 19th century industrial building, a light rail system, additional retail space and upper and middle income housing – for example the Scarlett Place apartments. Overall, the inner harbour redevelopment has, to date, cost an estimated US$650 million – over A$1 billion.[20]

The Baltimore urban renewal project has been praised for achieving a "renaissance". Dutton (1991: 18) states that the project is a great achievement:

> *"...in the subtlety and sensitivity of urban design and the creative and co-ordinated (sic) use of generous open space and public art to create a "rounded", safe, clean and confident environment, with a strong city image."*

However, as mentioned previously, the project has also attracted strong criticism from commentators, including Harvey (1991: 236) for being a strategy based on "bread and circuses" and for the level of public subsidy. Harvey notes that the level of investment in the first phase of the redevelopment in 1983 cost US$270 million (approx. A$450 million) at the time, of which 90 percent was publicly funded, yet the majority of the profits went to private corporations.

In addition, with 40,000 families waiting for access to public housing (Harvey, 1991: 238), it is a terrible indictment of city planning to note that no affordable housing was provided as a component of the redevelopment. Further, the jobs that were created through the redevelopment were polarized – either at the managerial end or at the service provision end – hotel staff, cleaners, cashiers and parking attendants. Indeed, Harvey (1991: 239) states that the "...conditions of grinding poverty in the city do not in any way appear to have been assuaged by all that massive downtown redevelopment". Given all the propaganda that surrounded the

[20] Information derived from by the Baltimore Chamber of Commerce web page, March 1999.

redevelopment, Harvey (1991: 237) suggests that "...[i]f people could live on images alone, Baltimore's populace would have been rich indeed."

The neighbourhood of Canton, subject of the Baltimore case study, is contiguous to earlier urban revitalization projects around the inner harbour. It was formerly degraded by industrial contamination and is now being remediated and redeveloped for housing and commercial uses. The neighbourhood was a predominantly working class suburb. As with East Perth in Western Australia, the development trend is for upper-income housing and exclusive commercial development (Dutton, 1991: 19). Generally, very little effort has been made to provide for affordable housing and little, if any, consideration has been given to environmental issues including the provision of habitat for other species.

Baltimore is also an important case study from an environmental viewpoint. The city is one of only a few that is currently being examined under an American National Science Foundation research grant for long term ecological research (LTER). The purpose of the research is to investigate how the city acts as an ecosystem and to study its impacts on species distribution and abundance, energy flows, the generation of waste, and the consumption of raw materials among other things. The ways in which this study will (or will not as the case may be) affect future urban revitalization projects in Baltimore provides a notable case study for similar projects elsewhere. Currently, the only provision for habitat for other species that has occurred in the inner harbour redevelopment was the National Aquarium with imitation rainforest ecosystem, tanks of fish and dolphin shows. A far cry from ecojustice.

Green around the gills – the demography of pollution in Baltimore

Census data

GIS analysis

Characteristics mapped were education, income, occupation, property values, rates / taxes, ethnicity/ race, age of housing stock, age and gender together with the location of hazardous land uses.

Locational forces

Description of the site

An Australian case study - Perth (city serene?)

Perth is renowned for its blue skies, sunshine, fair weather, friendly people and relaxed atmosphere. At least this is the face that the city wants to present to the world, prompting one commentator to remark that "the sun always shines in Perth" (Taylor, 2000). However, the city

has a dark history that it would rather forget, and one that is still manifest in its contemporary cultural milieux. Australian geographer George Seddon (1995: 36) said of Perth in the 1970s:

> *"Like all cities, Perth grows at the expense of the poor; inequalities are magnified in a large city. Most people living in Perth who have a choice prefer to live in pleasant surroundings with good schools, near the river, in easy reach of the sea, the central city and the university, which also serves as theatre and concert hall. Only the very lucky can have all of these things, but most people in Perth can still have some of them. In some recent subdivisions, there are none: this is cheap land, and this is where the poor live."*

Although Perth was founded in 1829, 100 years after Baltimore, its early industrial experience, consequent environmental legacy and prevailing social problems are in some ways quite similar. That sense of similarity but also of difference is what Jacobs and Haraway (1997) refer to as inside / outside, and provide a useful dialectical lens though which to view the two cities.

Hillier and van Looij (1998: 55) state that in Australia there is a "...chronic shortage of decent housing which is affordable to the income poor." In Australia, like Europe and North America, affordable housing is stigmatized. This has promped Hillier and van Looij (1998: 58) to assert that "affordable housing for lower income groups is a LULU (locally unwanted land use)." In a situation that is the converse of the United States, low income housing is predominantly located on the outskirts of cities. During the late 1970s and throughout the 1980s and 1990s, the inner city areas of Australian cities have been gentrified, displacing low income earners. Hillier and van Looij (1998: 59) note that "...the greater proportion of affordable housing stock in Australian cities is now being constructed in the new, outermost suburbs on greenfields sites on the urban fringe." They assert (1998: 62) that "...such activity amounts to an expulsion of the poor from our cities."

East Perth Urban Renewal Project

Industrial history

The 146 hectare site (360.7 acres) redevelopment area at East Perth was formerly an inner city industrial area with uses including a gas works, a foundry, tanneries, a sewerage treatment plant, cement factories, a power station, and less hazardous land uses such as automotive mechanics and panel-beating premises. Development of the suburb for industrial purposes commenced with the draining of Claise Brook – a natural watercourses that traverses the site, in 1873. This allowed former swamps and marshes to be filled and developed.

The story of development in East Perth began in the 1870s with the reservation of a recreation reserve – Wellington Square (Seddon and Ravine, 1986: 123) although it would not be used until some two decades later. In 1881, a railway line was constructed through East Perth. In 1884 the suburb was still relatively small. Seddon and Ravine (1986: 264) described it as having only 112 houses and a population of approximately 600. However, in the early 1890s, a gold rush occurred in Western Australia and East Perth was filled with migrants seeking a better future. Development took place virtually overnight. By 1894, the suburb had doubled in size to a population of 1300, which grew to 6000 by 1904, accompanied by a growth in housing from 245 houses to over 1000, although much of this was rental as opposed to owner occupied (Seddon and Ravine, 1986: 264). Houses were constructed on very small lots and East Perth was quickly

characterized by its density of development. Households were commonly 5 persons or more in size and the overall density was about 100 persons per acre (Seddon and Ravine, 1986: 265). This development was also accompanied by outbreaks of disease such as cholera and typhoid due to the city's poor infrastructure. The Australian poet Henry Lawson was a visitor to East Perth in 1896. In an account of living conditions in East Perth, Lawson described the suburb as a tent city without running water and Claise Brook as one of the city's "natural sewers" (Seddon and Ravine, 1986: 166).

Towards the end of the 1890s, East Perth had attracted a range of small industries. These included upholsteries, brickyards, two tanneries, laundries, breweries, and a soap factory (Seddon and Ravine, 1986: 265). To combat sanitation problems, sewerage filter beds were installed in Claise Brook in East Perth in 1905 (Seddon and Ravine, 1986: 154).Thus, by the turn of the century, East Perth had established its character, and acquired some problems too, that would characterise the suburb up until its redevelopment almost a hundred years later. These characteristics, as discussed above were a densely populated, working-class suburb, comprised of transient or itenerant labourers, living in large households amidst a range of industries and undesirable land uses.

By 1911, the population of Perth was 87 000 and had grown by 81 000 people from its 1884 level of only approximately 6 000 – a 93% increase (Seddon and Ravine, 1986: 146). This explosion of Perth's population placed significant pressure on accommodation, and was accompanied by a 1000% increase in property values (Seddon and Ravine, 1986: 152).

With ready access to the port of Fremantle by rail, some industry was attracted to the site.

Reflecting Dutton's (1991) sentiments regarding Baltimore's inner harbour redevelopment, the pre-redevelopment East Perth was described by Greive et al (1999: 227) as a place characterized by:

> *"...generally poor quality housing, set amidst decaying warehouse and industrial landscapes...blighted areas with a high proportion of the cash and absolute poor...".*

Although less grandiose in scale, and certainly representing only a fraction of the cost of the Baltimore urban renewal project, realistic comparisons can still be made between Baltimore and East Perth.

Aboriginal significance

East Perth has played, and continues to play, an important role in the relationship of traditional Aboriginal custodians - the Noongar, with "Derbal Yarragan" – the Swan River. There is no doubt that East Perth was a site of religious and ceremonial significance as well as an important hunting and camping area.

In the more recent past, East Perth was a residential area for Aboriginal people (Kinnane, 1993; Maushart, 1993). The Coolbaru Club, a film about a Noongar dance hall in East Perth, depicted everyday life for Aboriginal people living in the suburb mid - 20th century. Up until the 1960s, Aboriginal people would be accosted by police for just walking down the street. Whilst post-Second World War white narratives evoked methaphors such as "the engine of progress" and "the hour of ...greatest courage". Under the guise of progress, white Australia actively

sought to erase any trace of Aboriginal presence in Perth and to make Aboriginals more like "white fellahs", to live "...according to reasonable white standards". (Kinnane et al, 1996). The City of Perth was declared a prohibited area under section 39 of the Aborigines Act 1905. The Act stated that "Aborigines found loitering in the city will be accosted by the police and possibly arrested if they cannot explain their presence in the town." A red line was drawn around the Perth central area and it was declared off limits to Aboriginals after 6.00pm. Further, the cohabitation law arrested white people for associating with Aboriginals (Kinnane et al, 1996).

Life was (and to a large extent still is) difficult for Aboriginal people. Those living in East Perth were no exception. Under white law, Aboriginals were not regarded as Australian citizens. Aboriginal families were under constant police surveillance. They could not own land and accommodation, even rental properties, was very difficult to obtain (Kinnane et al, 1996). According to the narrator of the Coolbaru Club "...if you were lucky, you landed up living in East Perth...it was a melting pot for black fellahs, pommies, Irish, Greeks." (Op. cit). East Perth was characterized by "...factories...industry, smoke, coal, rats – everything it was all there." (Kinnane et al, 1996). Aboriginals suffered from extreme poverty, deprivation and discrimination. Institutional racism was rife, to the extent that Aboriginals enjoyed the privilege of being treated as wildlife, with Aboriginal matters being dealt with under the Colonial Secretaries Department of Aborigines and Fisheries. Bus drivers often refused to pick up Aboriginals and when they did they had to sit at the back of the bus and were only allowed to disembark at limited stops. Many shops would not serve Aboriginal people and Aboriginals required permits to pass through prohibited areas. Returned Aboriginal soldiers were not given war pensions and were not entitled to housing unlike other servicemen (Kinnane et al, 1996).

East Perth was also a notorious area for institutions that separated Aboriginal children from their parents under the guise of "protection". For example, Bennett House – also known as the East Perth Girl's Home and Matron Campbell's, was a way station for children in transit to Mogumber - the Aboriginal detention and reform center at Moore River, some 100 km to the north of Perth. Bennett House also performed the function of Aboriginal womens' hostel (Maushart, 1993: 272). Another East Perth institution with a legacy of suffering for Aboriginal people was "Sister Kate's" - a school of sorts for Aboriginal children, who were deemed by the government to be more white than Aboriginal (Maushart, 1993). They were primarily directed at teaching Aboriginal women how to become "useful" domestic servants in white households.

The "renaissance"

The East Perth project was first proposed in the early 1980s under a Labor government (Greive et al, 1999: 230) but it stalled due to the high development costs - A$100 million (US61 million). However, following the introduction of the Federal Labor government's "Building Better Cities program, funding was made available for the project. This is an important consideration, and one that warrants a quick departure. The Building Better Cities program was administered by the then federal Department of Health, Housing and Community Services (Anon., 1991). It ran from 1991 until 1996 (Jackson, 1998: 18) The program had a budget allocation of A$816 million (US$ 498 million) over 5 years (Anon., 1991). The aims of the program included:

> *"...encourag[ing] and demonstrat[ing] best practice for urban planning and management by all levels of government; support[ing] the provision and upgrading of essential infrastructure; recognis[ing] the links between urban environments and their impact on the health and well-being of urban dwellers; and pursu[ing] social justice objectives including housing choice and affordability. Built into the program [we]re strong environmental and social justice concerns." (Anon., 1991: 32)*

The original design concept changed considerably during planning phases. Professor Peter Newman in an article about Perth's rail renaissance stated that:

> *"The largest urban village will be built on derelict industrial land at East Perth. With Better Cities funding, the 40ha site is being converted to a European-style, pedestrian-oriented town based around a rehabilitated creek and linked by rail to the city." (1992: 24).*

So what happened to the urban village. Well for starters, the site was expanded to include another 100 ha of land. Second, as Alexander (1994) reported, although 1,000 units were initially proposed for affordable housing, a change of government and a redesign of the project, together with the deliberate exclusion of the State housing agency – Homeswest (Alexander, 1994, Greive et al 1999) drastically reduced the affordable housing component. The project was now focussed on "...a high-tech industry-education component" (Greive et al, 1999: 230). This is particularly ironic, and the ethics of the new government are questionable here, as the Building Better Cities funding was to some extent supposed to be linked to the provision of affordable housing, among other things such as transport, upgrading of infrastructure, and integration of services. It aimed to "...achieve improved urban environments and more livable, ecologically sustainable and equitable cities..." (Anon., 1991: 33).

The East Perth project, echoing critical acclaim for Baltimore, has been described as "a model for urban renewal" and "Australia's most exciting urban renewal project" (EPRA, 1997: 1). Like Baltimore, it too has won a series of national design awards. According to the East Perth Redevelopment Authority (1997: 1), the decontamination of the site, costing A$15 million (US$9 million), was "one of the largest remediation programs of its kind".

The development will ultimately have a population of 3 900 people. Like the inner harbour redevelopment in Baltimore, the population will largely be middle-class, young, single and dual income professionals, looking to live in a safe (prestigious) suburb close to the central business district. The predominant uses of the site, apart from residential, will be art galleries, cafes, a hotel, high technology offices, and retail facilities (EPRA, undated). Maximum effort has been made to stress the technology-friendly nature of the redevelopment, reflecting international trends in the division of labour. These same trends were manifested in Baltimore over a decade earlier in the 1980s (Harvey, 1991: 236).

Similar to Baltimore too is the treatment of affordable housing and the environment. Although East Perth has provided more affordable housing than in the Baltimore redevelopment, it is still grossly under-serviced, especially given, as Hillier and van Looij (1998: 55) note, that there is a "chronic shortage" of affordable housing in Australia. At the time of the 1991 census, this amounted to 2.6 million people nationwide. The figures for Perth are comparable with those for Baltimore. The former residents of East Perth were "predominantly the elderly, new immigrants, underemployed youth and Aboriginals." (Greive et al, 1999: 225)

Insofar as the environment is concerned, apart from the remediation of toxic wastes on the site, other species have been given little consideration. For the most part, nature has been relegated to the domain of either parks or public art – such as stone turtles in prominent water features. Aboriginal heritage has suffered a similar fate, and the traditional custodians are treated somewhat as natural artifacts:

> "The foreshore was a meeting and camping place for the Noongar People, it was abundant with food such as fish, waterfowl and tortoises – a piece of history which has been preserved through public art." (EPRA, 1997: 2)

The original Aboriginal inhabitants of the neighborhood are now poorly represented in the redevelopment. Their culture has been relegated to the domain of public art and little provision has been made for Aboriginal housing. There are very strong parallels between Baltimore and East Perth in the official focus on design and commercial return at the expense of low-income earners and non-human species. Both projects may have succeeded in creating communities, but they are undeniably communities of exclusion.

Demography of pollution

Census data

GIS analysis

Locational forces

Description of the site

The role of planning in the two cities

Case Study	Total Site Area	Polluted Area	Pre-renewal land uses	Pre- Renewal Population	Development Cost	Post-Renewal Land Uses	Post Renewal Population	Number of Affordable Housing Units	Percent of Total Housing Units
Perth East Perth	360.7 acres (146ha)		gas works foundry tanneries sewerage treatment plant cement factory power station light industry • automotive mechanics • panel-beaters warehouses residential	**Total** ***% poor*** ***% ethnic*** ***%single*** ***%DINK*** ***Blue collar*** ***White collar***	Clean up A$15 million (US$9 million)	Retail Education Residential Administrative Cultural Recreational	**Total** 3, 900 ***% poor*** ***% ethnic*** ***%single*** ***%DINK*** ***Blue collar*** ***White collar***		
Baltimore Inner Harbor	240 acres (97.1ha)		steel works ship yard power stations warehouses residential light industry	**Total** ***% poor*** ***% ethnic*** ***%single*** ***%DINK*** ***Blue collar*** ***White collar***	US$650 million (A$1 billion)	Retail Education Residential Administrative Cultural Recreational	**Total** ***% poor*** ***% ethnic*** ***%single*** ***%DINK*** ***Blue collar*** ***White collar***	Nil	0%

TABLE X – A COMPARISON OF EAST PERTH AND BALTIMORE

Similarities

Baltimore shares with Perth a colonial history. It is the northernmost Southern city in the United States. Bullard (1990: 97) notes that a "colonial mentality exists in the South, where local government and big business take advantage of people who are politically and economically powerless. ...[I]t is the U.S. Third World...".

Differences

Strategies

Success

Policy responses

Synopsis and prognosis

Chapter summary

CHAPTER 6 CONCLUSION

If people could live on images alone, Baltimore's populace would have been rich indeed. (Harvey, 1991: 237)

The conditions of grinding poverty in the city do not in any way appear to have been assuaged by all that massive downtown redevelopment. (Harvey, 1991: 239)

Ultimately environmental quality and environmental equity are about more than just freedom from harmful or toxic substances. They are about challenging the current political and economic systems that have enabled corporations and governments to exploit vulnerable communities for profit and private gain. Bolin, (1998: 230) notes that "[t]o address underlying causes of vulnerability will take ethical and political commitments well beyond market imperatives...". Any meaningful program to implement environmental justice must necessarily extend to include issues such as good quality housing, crime-free neighborhoods, equal access to jobs, clean water and safe places in which to live and work. It will necessitate ensuring that all groups in society who do not have equal access to these things are empowered to make sure that they do. In real terms it will necessitate a redistribution of wealth and power. It cannot rely on technological fixes or minor adjustments to current government decision-making processes.

Environmental justice advocates have argued that the Not In My Back Yard (NIMBY) syndrome ought to be replaced by a policy of Not In Anyone's Backyard, Anywhere, Anytime. This policy is the only one that will ensure that discriminatory siting of undesirable land uses is eliminated. However, Bullard (1990: 37) despondently states that "[l]ocational conflict involving unwanted land uses is inevitable." In doing so he accepts Capitalism and all its ills, disparaging the radical reform that is necessary to counteract environmental injustice.

If it is true that post industrial cities like Baltimore are "third world cities' in the first world, then it may be appropriate to look towards third world solutions.

Chapter outline

Summary of findings

The social costs of environmental discrimination

Economics is blind to justice

Environmental ethics

The early antagonism between the environmental movement and environmental justice advocates was highlighted in chapter 2. Some of the more radical elements of the environmental movement have remained antagonistic to the philosophy of environmental justice. Their emphasis on protecting the environment at all costs has drawn criticism from the left, who claim that such views are fascist as they devalue human life (Ferry, 1995: 90-107; Hargrove, 1995: xi). The view that human rights are equal to natural rights has been heavily criticized for perpetuating environmental elitism. Other criticisms directed at environmental movements regarding their elitist stature are based on the notion that these groups are typically middle class

in origin and the issues they address have little relevance for vulnerable communities struggling to survive (Bullard, 1990: 1; Bryant and Mohai, 1992: 6, Taylor, 1992: 39). According to Taylor (1992, 39) "...we have yet to see an environmental group champion the cause of homelessness...or joblessness as issues on which it will spend vast resources." It is necessary for the environmental movement to address these charges as it is in the greater interests of workers, the poor and environmentalists to work together to counteract the large scale social and ecological harm that is a product of the Capitalist mode of production.

Environmental ethics and decision-making

According to Wenz (1995: 62), decision-makers may seek recourse to four ethical positions when confronted by difficult moral decisions. These positions are libertarianism, utilitarianism, Kant's categorical imperative – precedent vs. universal laws, and the golden rule – do unto others... .

Much of planning however, comes down to a matter of opinion and value judgements. For example, Westra (1995: 114-115) in her examination of a discriminatory location decision notes that the chief planner provided an opinion to large American industrial waste company – BFI, regarding the suitability of a proposed hazardous land use. In his opinion the proposal did not require zoning approval. This opinion later proved to be incorrect. However, the result was that BFI were successful in pressuring for approvals to the detriment of the local community. It also emerged that "willful and malicious" secret negotiations between city planners and BFI resulted in grossly inadequate buffers for adjoining residential areas (Westra, 1995: 117).

Westra criticizes city planners for their "...almost total [lack]...[of] concern with residents' health, safety and basic welfare as well as their human and constitutional rights." (115: 122). Indeed, she (1995: 123) states that such actions can only but be regarded as "culpable negligence, particularly in the case of those entrusted with the public interest." She goes further asserting that "[w]hen hazardous substances can be placed within a few miles of water supply sources, cultivated fields, homes and parks, then we have a problem that needs to be addressed urgently."(1985: 129) The heart of the matter is that "...there is a certain incommensurability of industry risks...(economic harms)...and...public risks...(health and safety)...[which] is never openly confronted. ...some risks are incompensable." (Westra, 1995: 129).

Libertarianism

Libertarianism is based on the notion of freedom. Individuals are seen to have the right to do as they please, provided that they do not harm other in the process. Under the libertarian ethic, an "...individual who has not consented should not be burdened by...toxic waste." This ethic has however been criticized for being impractical and unimplementable (Wenz, 1995: 62).

Utilitarianism

The precept of utilitarianism is that of maximizing the greatest good for the greatest number of people. It is often employed by planners in making complex decisions (Byrne, 1998). One of the most striking products of decisions that are based on utilitarianism is that "...some people pay a greater price than others." (Rose Johnson, 1994a: 219). According to Rose Johnson, "[t]his fact of differential experience is explained and legitimized as a social evil acceptable in the light of a greater good." (Rose Johnson, 1994a: 219).

Kant

The golden rule

Free and informed consent

Wigley and Shrader-Frechette (1995: 136) offer the doctrine of free and informed consent to counteract unethical decision-making in land use planning. They state (1995: 139) that it is "...an important part of the traditional American value system...and provides a foundation for environmental justice." The doctrine of free and informed consent is predicated on the medical practice of informing patients of all the risks attached to medical procedures. The two tenets of the doctrine are the protection of individual autonomy and protection of individuals from harm. According to Wigley and Shrader-Frechette (1995: 139) there are four requirements for free and informed consent to operate. There must be full disclosure of information to individuals by decision-makers, potential victims must be able to competently evaluate that information, they must also be able to fully understand all the risks and dangers antecedent to the proposal and they must voluntarily accept these risks and dangers.

In their case study of the uranium enrichment facility in Louisiana (discussed in chapter 2) Wigley and Shrader-Frechette (1995: 143) expressed concerns that in vulnerable communities it may be impossible to satisfy the requirements for free and informed consent. Factors such as a "...community's depressed economy, high unemployment rate and low levels of education" can seriously undermine the conditions for free and informed consent. These variables are very import to consider, and careful attention is given to them when examining the Perth and Baltimore case studies in chapter 5. Wigley and Shrader-Frechette (1995: 143) state that low levels of education can negate an individuals ability to understand the complexity of hazardous land use siting proposals, the depressed economic condition of a community can act as a coercive factor making risky ventures seem more attractive, and the lack of alternative economic options can negate the voluntary acceptance principle.

Measures to counteract environmental injustice – resistance is futile...or is it?

Citing Harvey (1989: 10-11) Bolin refers to the interplay between social, economic, historical and spatial processes as a "...continuing socio-spatial dialectic." (Bolin, 1998: 8). He asserts that efforts to resist discrimination "...may be opposed and contested, particularly if they threaten patterns of privilege and profit, or disrupt existing social relations and land use patterns." (Bolin, 1998: 8). Nevertheless, there have been an increasing number of grassroots organizations who have mobilized resistance against environmental injustice over the past decade. They have tried a variety of different options to address inequity, some of which have been quite successful.

According to Laituri and Kirby (1994, 135), "Remediation projects, health testing and compensation do not constitute a solution to the problem of resource contamination. Indeed any lasting solution would represent a fundamental challenge to industrial practice." They call for solutions that progress beyond "narrow, technical" fixes to encompass "the broadest social, economic and political spectra." Wigley and Schrader-Frachette (1995: 138) argue that "...we should give the interests of the least advantaged members of society highest-priority." Solutions that progress towards the realization of this goal include the creation of grassroots resident's

organizations responsible for monitoring the activities of industry and government, compensation for residents affected by contamination, and the sharing of resources and cooperation between the government, industry and community. One of the most simple, yet effective solutions is to provide communities with greater access to information (Lee, 1992: 15).

More focused solutions promoted by commentators including Bullard (1990) embrace the provision of health care for affected communities, the regulation of government and corporations to ensure that waste management practices are significantly modified and the empowerment of people of color to participate in decision-making. Bryant and Mohai (1992: 4-5) add "undertaking research geared towards understanding environmental risks, initiating projects to enhance risk communication..", the inclusion of "racial and socio-economic equity considerations[s]" into decision-making, "enhancing the ability of ...minority institutions to participate in ...the development of environmental equity", and "...developing policy statement[s] on environmental equity" to this list. These solutions fall within the broad categories of institutional reform, community empowerment, compensation and corporate responsibility. They are examined in greater detail below

Institutional reform

Bullard (1990) in a review of citizen actions against environmental injustice considered the various remedies that have been employed by government agencies and corporations to address resident's concerns. These included revising legislation (including city ordinances) that addressed waste storage and disposal; the installation or improvement of monitoring systems, "upgrading safety and emergency programs, compliance with zoning codes, and emission standards and adjudication." (Bullard, 1990: 66). He also argues for greater accessibility to jobs for African American people within government agencies responsible for the monitoring and / or regulation of contaminated sites (Bullard, 1990: 101). This need for workforce diversity has also been recognized by...

One of the common misconceptions regarding environmental justice reform in the United States is that the Environmental Protection Agency and Federal Government recognized the problem and took action of their own accord. Bullard (1990: 113) sets the record straight, stating that it was only after considerable community activism that the government recognized and began to address the issue.

Legislative reform

An often-touted solution to environmental injustice is the development or revision of environmental or public health legislation to provide greater protection to vulnerable communities. Gaylord and Bell (1995: 35) discuss the various recent legislative reform initiatives that have been undertaken in the United States. These include "...providing compensation to host communities, enhancing public notice and participation, improving risk assessment methodologies, creating state justice policy and increasing public communication and information." Other initiatives include routine data collection and monitoring of public health, "...compliance monitoring and enforcement actions..." and stakeholder involvement in agency initiatives (Gaylord and Bell, 1995: 35). Some of these proposals are now discussed in greater detail.

Fair share legislation

Bullard (1990: 117) reported that the city of New York has experimented with "fair share" legislation "...designed to ensure that every borough bears its fair share of noxious facilities." The intent of the legislation is to ensure an equitable distribution of hazardous land uses throughout the city such as waste transfer stations and salvage yards. It is however, difficult to envisage Lexington Avenue being the site for a waste dump or a garbage incinerator. Indeed, the fact that the hazards are to distributed on the basis of boroughs will be enough to ensure that affluent areas are not affected. Such boroughs will simply relegate the undesirable land uses to the worst areas of the borough, which are invariably those already occupied by low income earners and / or people of color.

Zero tolerance

Another suggestion for legislative reform, proposed by Bullard (1995b: 9), is the development of zero tolerance legislation. According to Bullard, this legislation would have a "civil rights" flavor and would promote "zero tolerance [for discrimination] in such areas as housing, education and employment". At the time of writing his paper, Bullard advocated that the legislation make public agencies accountable for the intended or unintended actions of their policies upon vulnerable communities. His position on a Clinton administration taskforce resulted in the drafting of precisely that kind of legislation.

Public agency accountability

In the United States, action has been taken to remedy the impacts of environmental racism. The Clinton administration "issued an executive order on environmental justice" on February 11, 1994 that required that federal government agencies ensure that their actions do not disproportionately impact on people of color and low-income earners. (Boerner and Lambert: 1995, 61; Gaylord and Bell; 1995: 32). Wenz (1995: 120) has called for "an independent...voice to counterbalance the inevitable bias of internally commissioned studies."

Procedural reform

A complimentary action to legislative reform is procedural reform. It requires the incorporation of principles of procedural justice into agency policy making and decision making processes. Such reform includes greater public participation in policy development and enforcement, openness, honesty and accountability in decision-making, and awareness raising campaigns.

Policy making

Bullard (1995b: 11) has criticized the "DAD" operandi of public agencies. This process of policy development is described as "decide, announce and defend". It has also been termed "develop,, distribute, defend" (Byrne, 1999). He has called for greater public involvement and greater transparency in public agency decision-making processes. Bullard advocates the participation of grassroots environmental justice groups as "full partners", greater representation for vulnerable communities on decision-making boards, training and outreach forums and greater consideration to policy enforcement.

Land use planning and "acceptable risk"

According to Laituri and Kirby (1994, 136-137) the recognition of environmental racism and concomitant solutions "have been slow to infiltrate the planning process...". They assert that the reason for this is that planners "...have depended upon models of rationality, in both the analysis of risk and the determination of environmental impacts, that are incapable of incorporating issues of equity". One such model of rationality is the assignment of acceptable risk.

Decision-making relying on cost-benefit analysis or contingent valuation to determine acceptable levels of risk are inherently flawed and predicated upon value judgements that bias their outcomes (Byrne, 1998). For example, Bullard (1990: 114) notes that calculating acceptable risk based on the likelihood of fatalities fails to take into account injuries and stressors that are just as detrimental to human wellbeing "...including developmental, reproductive, respiratory, neurotoxic, and psychological effects". . He states that "...the use of "averages" often result from value judgements that legitimate existing inequities." Bullard ventures further, arguing that:

> *"...the dominant paradigm has (1) institutionalized unequal enforcement; (2) traded human health for profit; (3) placed the burden of proof on the 'victims' and not the polluting industry; (4) legitimated human exposure to harmful chemicals, pesticides, and hazardous substances; (5) promoted risky technologies , such as incinerators; (6) exploited the vulnerability of economically and politically disenfranchised communities; (7) subsidized ecological destruction; (8) created an industry around risk assessment; (9) delayed cleanup actions; and (10) failed to develop pollution prevention as the overarching and dominant strategy.*

These are serious, and arguably, irrefutable indictments. To counter them, Bullard (1995b: 12) has called for prevention of harm principles to guide agency decision-making.

Judicial processes

Commentators such as Bullard have noted that a common form of citizen action against intransigent governments or corporations is to seek recourse to legal processes. However, it is often the case that the matter does not proceed to trial, but is rather resolved through out of court settlements and / or offers of compensation to the victims. Indeed, Bullard notes that there was only one community out of the many that he investigated that was successful in shutting down the polluting industry, but even then they were unable to get the infrastructure dismantled and the site remediated (Bullard, 1990: 66).

Community empowerment

Gould (1986: 3) noted the increasing number of grass roots organizations in America providing services that had been withdrawn at the State and federal levels. These include "...neighborhood health clinics, daycare centers, storefront schools, food co-ops and environmental activist groups...".

Liberation theology

One of the most frequent solutions promulgated by environmental justice commentators is the mobilization of grass roots organizations and empowerment of the community. Of

particular interest to many is the growing role of church groups to act in this capacity. Bullard (1990: 91) has noted the role of the "black [sic] church" in "...serving as the cornerstone of the civil rights movement...and...[as] a useful vehicle for black communities fighting toxics." Reardon (1999) has noted a similar phenomenon in Boston where church groups are participating in a form of "liberation theology" – assisting youth in dealing with violent crime (Reardon, 1999: 9). In particular, these groups draw upon collective values shared by those within the community (Reardon, 1999: 10).

University research centers

A second option for greater grassroots empowerment in resisting environmental injustice is for universities to provide greater support to these groups (Lee, 1992: 22). The establishment of university research centers that provide training, technical assistance such as chemical analyses, monitoring or policy formulation would greatly assist grassroots groups which typically have limited resources.

Pollution control, regulation and compensation

Pollution control

Regulations and penalties

Compensation

Rarely does compensation work in favor of vulnerable communities. It usually entails forfeiting rights to take action against corporations at a future time, even if new information reveals that citizens are at a greater risk than was previously known. Nor does compensation involve inter-generational equity. Children born with birth defects are seldom able to enjoy the compensation that was paid to their parents prior to their conception. There are three general types of compensation – cash payments, corporate buy-outs and provision of, or contributions to, community infrastructure such as schools, health care centers or community halls.

Financial compensation

This option is one that is generally preferred by corporations. It enables the corporation to suffer a small financial loss in exchange for the right to keep polluting. There are often requirements that residents who receive compensation packages sign legal agreements top prevent them from taking action against the company at a future date.

Corporate buy-outs

Perhaps a more expensive option for corporations is that of company buy-outs. This form of compensation occurs when a corporation, or occasionally a government agency, purchases affected housing. Residents are then either relocated or use the proceeds of the sale to purchase housing elsewhere. One of the particularly unfair aspects of buyouts is that values returned on contaminated properties are usually very low. Valuations on the properties wrongly consider that the properties fall within contaminated areas, thus reducing the value of the properties on the open market, and conveniently reducing the level of compensation that agencies or corporations have to provide (Bullard, 1990). Furthermore, the relocation of residents following a buy-out

fragments the community, often destroying strong social ties that were formed under the adverse conditions of living with pollution (Bullard, 1990: 109). Bullard (1990: 112) has referred to such people as "environmental refugees".

Corporate responsibility

Closing down polluters

The moral responsibility of planners

Hillier and van Looij (1998: 59) argue that the behavior of urban and regional planners in accepting environmental injustice as a product of the operation of free markets means that they believe "...different people have different moral entitlements; that the rights of some entail the right to deny the rights of others, and effectively that the wealthy have more rights than the wealth-less."

A way forward

Roles and responsibilities

From advocacy to action

Education

Planners

The broader community

Where to from here?

From environmental justice to justice to the environment

Both Szasz (1994) and Dobson (1998) have noted that there are potential bridges over the fissure between environmental justice and ecojustice. From the environmental justice viewpoint, concerns have been expanded from the effects of toxic waste on people to the general effect of human activity on the environment. Dobson (1998: 23), citing Dowie (1995), notes that: "...as toxics were found to contribute to habitat destruction, species extinction, and loss of wetlands, the anti-toxics agenda entered the terrain of the conservationists and the potential for a broad environmental coalition became real."

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APPENDIX 1

Pathogenic industrial products and their expression

There are many different types of pathogens involved in incidents of environmental injustice. The causes of disease include air pollution, water pollution, the dumping of toxic waste, radiation and others. Diseases that can be attributed to environmental racism include cancer, lukemia, emphysema, tuberculosis, liver disease, heart disease, kidney disease and the like. Table one below lists the various land uses associated with environmental racism and the pathogens and diseases that characterize these land uses.

Land use	Pathogen	Disease	*Source*
Waste incinerator			
Municipal landfill			
Gas works			
Gold mining	Heavy metals, cyanide and arsenic.		Rose Johnson and Jorgensen, 1994: 86-98.
Electronics industry	PCB's	Congenital birth deformities.	Rose Johnson and Button, 1994: 206-215.
Cleaning	Xylene	Brain hemorrhages, lung and kidney damage.	Bullard, 1995b: 18;
Railways	Creosote	Skin burns,	Phillips, 1995
	Heavy metals	Intestinal hemorrhaging, strokes; brain damage, nervous system damage.	Phillips, 1995

Source: (Author, 1999).

TABLE 1 – NOXIOUS LAND USES AND THEIR PATHOGENS